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Legacy - December 2002 & July 2003

South Carolina Institute of Archaeology and Anthropology--University of South Carolina

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Legacy

South Carolina Institute of Archaeology and Anthropology

Inside...

Exploring Carolina-Africa Watercraft

By Mike Ameika

During my internship semester with the SCIAA Charleston office, I was fascinated to learn that the local waterways were the economic veins during the early colonial times. Interning with the Maritime Research Division staff also sparked more of my interest in the African connections to South Carolina, especially the nautical elements. As the Carolina settlers struggled to survive in the harsh new environment, they took every possible advantage of the American Indian and African boating skills. Their traditional influences were probably most evident in the early years of settlement when the first inhabitants needed all the help they could find in the process of developing a fleet of inland and coastal craft. Of the types of boats used in the Lowcountry, the "dugout" or canoe was the vessel most often crafted, powered by, or piloted by the slaves.

Biological anthropological studies have found that the frequency of a unique variant of the sickle cell gene only found previously in the Gold Coast peoples of West Africa (Ghana) is the exact same genetic "fingerprint" that is in the African-American populations of the Sea Islands off the coasts of South Carolina and Georgia. This aspect portrays the correlation more clearly of how directly connected our two cultures really are.

In June of 2002, I had the chance to travel to Ghana in West Africa. My girlfriend was studying at the University there, and I arranged an independent study in cultural

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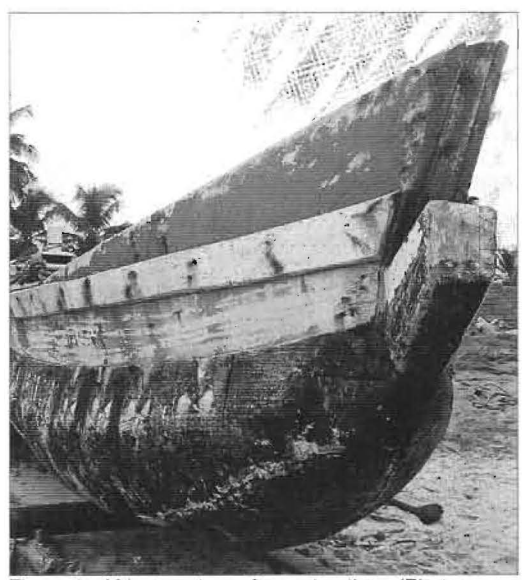

Figure 1: African watercraft construction. (Photo courtesy of Mike Ameika)

Field Notes

By Jonathan Leader, Interim Director

***Legacy*, published only once this year, is the magazine of the SC Institute of Archaeology and Anthropology, University of South Carolina**
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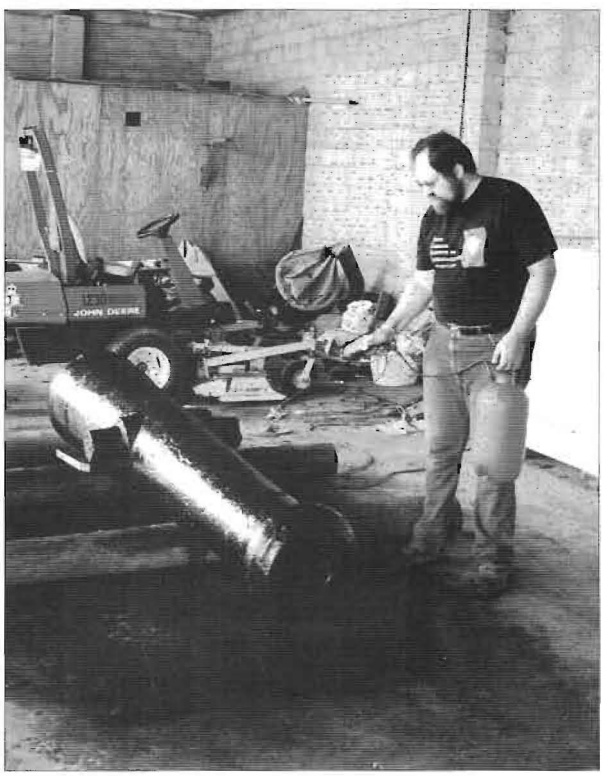
The South Carolina Institute of Archaeology and Anthropology has gone through some remarkable changes since the last issue of *Legacy*. Dr. Bruce E. Rippeteau has stepped down from the directorship and continues as a university Research Professor at the Institute. We all thank Bruce for his 19 years at the helm and look forward to the book and other projects he now sets his hand to complete. Normally, a move of this nature signals a slowing of productivity, but it is very possible that Bruce may actually be busier now than ever before. Bruce's new office is located at Hamilton Hall 209 and he can be reached by telephone at (803) 777-2321 or by email at <rippeteau@sc.edu>

The SCIAA celebrates its 40th year in 2003. Forty years is a significant milestone in any institution's life. It is very common for the drive, focus, and energy of research groups to slack off at this point. Fortunately, this does not define either the Institute or its staff. We are dedicated to the mission that launched us so many years before. Plainly stated the mission of the South Carolina Institute of Archaeology and Anthropology is to conduct archaeological research, conserve the state's heritage, and communicate this information to the public and profession. The Institute cooperates and consults with state and federal agencies and with private organizations to increase understanding of South Carolina's past. As Stan South so eloquently put it when describing his work at Santa Elena, the Institute's research is the public's *Doorway to the Past*.



SCIAA Interim Director Jonathan Leader conserving revolutionary war cannon for the City of Georgetown, one of three known to exist, now on display in Rainey Park, Georgetown, SC. (SCIAA photo)

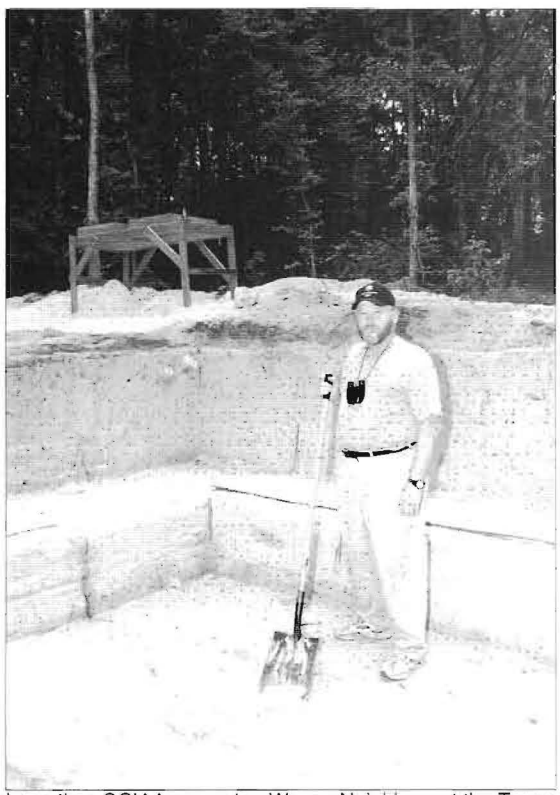
As you read this issue of Legacy, you will notice that some of the Institute's divisions have new names. The name changes are intended to more accurately represent our mission and the nature of our work. The Cultural Resources Consulting division is now the Applied Research Division. The Underwater Archaeology division is now the Maritime Research Division. The Savannah River Archaeology Research Program

and the Research Division retain their names. All of the articles presented in *Legacy* demonstrate clearly our collective pursuit of knowledge and focus on research.

There has been another change within the Maritime Research Division. Dr. Lynn Harris has left the Institute to pursue new areas of professional interest. Lynn's time at the Institute was very well spent. It simply isn't possible to list all her accomplishments in the space available, but a few must be mentioned.

Lynn Harris with high school intern. (SCIAA photo)

Lynn came to the Institute in July 1990 and stepped into the position of manager of the Sport Diver Archaeology Management Program. The program had become stultified over the years and Lynn was able to change its tone, tenor, and public perception in very short order. Shifting the emphasis from bureaucracy to public outreach and research Lynn developed an education program for sport divers and the public that included workshops on site recording, artifact identification and recording, surveying, and annual field training courses. Participants in the courses received certification that allowed them to work with the Maritime Research Division on state projects. So successful was this program that it was recognized by international groups and emulated in other states.


Long time SCIAA supporter, Wayne Neighbors at the Topper site. (SCIAA photo by Daryl P. Miller)

Lynn's dedication to education and partnerships lead to utilizing student interns from the College of Charleston and Texas A & M. The resulting dedicated core of volunteers made it possible for Lynn to tackle serious fieldwork even during times of fiscal constraint. One lasting result, beyond the publications and lectures one would expect, was the formation of the first two heritage trails in the state: the South Carolina Heritage Corridor-Maritime Archaeological Site Canoe Trail on the Ashley River, and the Cooper River Underwater Heritage Trail.

Perhaps one of the most important professional accomplishments took place between July of 1993 and June of 1994. The South African National Monuments Council (SANMC) asked Lynn to temporarily move to Cape Town to develop an underwater archaeology management plan and sport diver education program for the whole of South Africa, based on the SCIAA model. This was a singular honor and responsibility that Lynn completed with her customary professionalism and competence. If this were not enough, in May 2002, Lynn received a PhD. in History from the University of South Carolina, successfully integrating historical and archaeological research and concepts into her dissertation, which she wrote in-between all her other duties.

Lynn, we all wish you the very best. You will be sorely missed at the Institute. We take comfort in the

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anthropology for the visit. The trip was thoroughly enjoyable and enlightening. I spent as much time as I could in the small fishing villages that dot the coast. Methods of subsistence are the same as a 1,000 years ago: the sea provides food, labor, and trade. Traditional boat building practices have also stood the test of time.

While in Ghana, I observed many examples of the traditional African boat craft: small canoes, near-shore vessels, offshore vessels, and freshwater vessels. All of the vessels that I observed seemed to be built on the same premise of the dugout using one or two trees that were gutted and used for the hull. Villagers would then halve the hull logs in order for planks to be inserted in between. This permits a wider beam for a larger, more stable craft (See Figure 1).

The slim, highly maneuverable designs are particularly noted for their ability to handle strong currents and tide changes. Planks are attached to frames, which are fixed to the hull. The heights of the gunwales are crafted in proportion to the widths of the hull. Depending on the vessel's size, combinations of sails and oars are used as the methods of propulsion. Village fisherman, typically use dugouts 20 to 25 feet in length and take them out up to barely within sight of land, in good weather of course (See Figure 2). Some of the freshwater boats in the Volta region use up to five sails for propulsion (See Figure 3). The Volta is one of the largest manmade freshwater bodies of water in the world.

Figure 2: African watercraft from Ghana launched from the beach. (Photo courtesy of Mike Ameika)

Figure 3: A five-masted sailing vessel used in the Volta region of West Africa. (Photo courtesy of Mike Ameika)

Some historical documents describe southern colonial split dugout hull logs had planks on to the top of the dugout hull to increase the freeboard. Vice versa of the traditional method. This therefore may be more a construction technique characteristic of the Carolina American Indian's contributions. Though there is research stating that both of these methods were used in the Carolina colony, there is not enough evidence at this time to determine which was the primary choice. I suspect our Ghanaian friends still to this day employ the exact same boating techniques that they taught the early colonialists.

Coastal South Carolina's rich and varied underwater heritage, from prehistoric Indian canoes to Spanish galleons to Confederate Ironclads and beyond, covers a large spectrum of nautical history that has shaped our cultural landscape. Whether on land or in the sea, archeological relics abound and give us tangible evidence with which we can discern the various times and influences that have made the Lowcountry what it is today.

The wealth of resources that we have today is only a fraction of the available resources we have yet to find. The discipline of underwater archeology has proved pivotal in discerning certain historical and cultural influences and connections that would otherwise be forgotten. The advances that are continually made in the field will no doubt lead to new discoveries as well as shed more light on present research.

Michael Ameika, a senior specializing in Forensic Anthropology at the University of Montana, joined the Charleston Maritime Research Field Office as an intern for the summer. He was certified by PADI and has done diving off of the Florida Keys and the South Carolina coast. Upon graduation in January 2002, he plans to teach English in Chile and further studies in Anthropology and Archeology in graduate school once he returns.

The First Avocational Underwater Project in Georgia

By Charles Kelly

Lynn Harris, representing the SCIAA Maritime Research Division, assisted the Historic Preservation Office of the Georgia Department of Natural Resources in the first combined avocational/professional underwater archeology project in the state during November 2002. Ronnie Rogers and David Crass (State Archaeologist) initiated this project in conjunction with Paul Barans and Charles Kelly of the LaGrange Dive Center.

Georgia divers leaving the water. (Photo courtesy of Charles King)

After classroom and open water training sessions, volunteer divers began mapping a mile long site (9TP973) beneath the Chattahoochee River near West Point, Georgia. This diverse site contains a vast profile of the area history dating back almost 165 years. A variety of features at the site include everything from Civil War era artifacts to 1940s automobiles.

Photo of 1838 bridge pier. (Photo courtesy of Charles King)

The earliest feature currently being studied is the bridge support and remains of a covered bridge built by noted builder Horace King in 1838. King was born into slavery in 1807, was later freed, and went on to become a master covered bridge builder. He built numerous bridges and other structures throughout Georgia and Alabama before his death in 1885. This bridge along with the railroad trestle were burned on April 17, 1865 by Union Troops as they departed the town on the day following the Battle of West Point. The 5 X 15 meter middle log support is almost perfectly preserved below the waterline. The bridge was replaced in 1866 by another covered bridge, one block north, which stood until 1885, when it was destroyed by a flood. The 1866 covered bridge was replaced by an iron bridge another block north, which was destroyed by a flood in 1919. Evidence of all bridges, as well as items which fell off of them, still remain in the river.

SCIAA Underwater Archaeologist, Lynn Harris, briefs divers on their assignments. (Photo courtesy of Charles Kelly)

Also on the site are the remains of a steamboat believed to be the *C. W. Jones*. The stern paddle wheel boat broke loose from the wharf in a storm in 1888, drifted into the wagon bridge, and sank. This boat, along with at least two others, were used to transport employees and cargo back and forth to the textile mills down river during the 1880s. Other boat remains on the site include a 1930s era racing boat.

Class practices offset mapping technique. (Photo courtesy of Charles King)

For more information about this project, contact Paul Barnes or Charles Kelly at (706) 812-9011 or barnesserv@mindspring.com

State Underwater Archaeology Managers Meeting (SUAMM II)

By Chrstopher F. Amer

From September 19-22, 2002, SCIAA's Maritime Research Division and Georgia's Department of Natural Resources hosted the second State Underwater Archaeology Managers Meeting (SUAMM II). This year's meeting was held at historic Rice Hope Plantation, located near Charleston, South Carolina on the Copper River. The meeting assembled state underwater archaeologists from around the country, who met to support Georgia in developing an underwater archaeology program to manage and research its underwater cultural heritage. Building on the success of SUAMM I, held in Texas two years ago, this year's meeting provided a venue for free and frank exchange of information about each state's strategies, successes, and failures in managing their submerged cultural heritage. The results of the four-day-session provided Dr. David Crass, Georgia's State Archaeologist and his staff with the tools and support to design and implement their own underwater archaeology program tailored to Georgia's needs.

In the document, *From the Ground Up: A Preservation Plan for Georgia 2001-2006*, the authors note that, "Georgia, unlike neighboring states to the north and south has no underwater archaeology program" (page 59).

SUAMM II participants (left to right) Ronnie Rodgers (Georgia DNR), Roger Smith (Florida State Underwater Archaeologist), Jim Spirek (SCIAA-MRD), David Crass (Georgia State Archaeologist), Christopher Amer (South Carolina State Underwater Archaeologist), Chip Morgan (Georgia DNR), Susan Langley (Maryland State Underwater Archaeologist), Richard Lawrence (North Carolina State Underwater Archaeologist), Vic Mastone (Director, Massachusetts Board of Archaeological Resources), Lynn Harris (SCIAA-MRD), and Steve Hoyt (Texas State Marine Archaeologist). (SCIAA photo by Jonathan Leader)

There are seven states in the United States that have formal programs for managing their submerged cultural resources. These include, Texas, Florida, South Carolina, North Carolina, Maryland, Massachusetts, and Wisconsin. Why should Georgia develop such a program? The seven states, all but one of which is on the southern or eastern seaboard, have identified and recognized that the bottom lands beneath the waters of their states contain a vast multitude of unique and non-renewable vestiges of their past heritage. These physical remains include shipwrecks, historic docks and wharves, landings, and submerged abandoned towns, as well as evidence of over 13,000 years of Native American occupation. These remnants of our heritage have the potential to add to our knowledge of a largely undocumented aspect of each state's, and this nation's past. But only if they survive. On a daily basis, our underwater heritage is being destroyed by a variety of environmental and human factors, including erosion, pollution, development, and uncontrolled collecting and treasure hunting. One way to ensure that these endangered resources are preserved is to explore and record each site in a scientific manner and appropriately interpret it for the public.

SUAMM II participants get down to business in Rice Hope Plantation's historic dining room. (Photo courtesy of Susan Langley)

SCIAA Staff Recognized by National Preservation Award

By Christopher F. Amer

On Thursday, October 10, 2002, the South Carolina Institute of Archaeology and Anthropology, along with the numerous other federal and state agencies, organizations, and companies, was nationally recognized when it received the first annual National Trust for Historic Preservation / Advisory Council on Historic Preservation Joint Award for Federal Partnerships in Historic Preservation for its work on the *H.L. Hunley* and raising that historic submarine. John Nau, III, Chairman of the Advisory Council presented 21 awards during the one-and-a-half hour ceremony that was the centerpiece of the 2002 National Trust's National Preservation Conference held in Cleveland, Ohio.

H.L. Hunley award recipients (Front Row, Left to Right): Mr. John Miglarese (SCDNR), Ms. Elizabeth Johnson (SCDAH), Mr. Christopher Amer (SCIAA), Mr. Philip Grone (Department of State), Rear Admiral Ronald Silva (US Coast Guard), Lt. Colonel Frank Randon (USCOE), and Dr. William Dudley (USNHC). (Back Row, Left to Right) Mr. John Nau III (presenter), Mr. Warren Lasch (Friends of the Hunley), Richard Moe (President, of the National Trust for Historic Preservation), William Hart (Chairman of the Board of Trustees of the National Trust for Historic Preservation), Mr. Clive Cussler (Novelist), and Mr. Daniel Schwall (Titan Maritime). (Photo courtesy of the National Trust for Historic Preservation)

Recipients of the *Hunley* award included SCIAA, SC Department of Natural Resources, SC Educational Television, SC *Hunley* Commission, US Department of Defense, National Park Service, US Navy, US Coast Guard, US Army Corps of Engineers, Friends of the *Hunley*, National Geographic Society, National Underwater and Marine Agency, Oceaneering International, and Titan Maritime. Oceaneering International designed the truss system that supported the historic submarine during the lift and transport to the lab, while Titan Marine actually conducted the lift. After the ceremony, the recipients were treated to a sumptuous dinner at the exclusive Union Club.

New Changes in the Underwater Law

By Carl Naylor

Recent changes to the South Carolina Underwater Antiquities Act of 1991 include the elimination of Instructional Hobby Licenses and Weekend Hobby Licenses. These changes took effect in June 2002.

Instructional Licenses were issued to charter boat captains, dive shops, and dive instructors and allowed the holder to take dive charters and classes on collecting trips without each diver being required to have their own license. All recoveries were reported by the holder of the Instructional License.

Under the Antiquities Act the Institute (or the State Museum in case of fossils) has the right to inspect and photograph all recovered items for 60 days after they are reported in quarterly report forms. However, under Instructional Licenses, the holder reported fossils and artifacts without regard for which of their group found what. As a result there was no way for the Institute or State Museum to subsequently gather any further information about a particular artifact or fossil.

Since this type of license was initiated in 1991, there have been 19 of these licenses issued. At the time of the change abolishing the Instructional License there were six current Instructional Licenses. Those Instructional Licenses still in effect will be allowed to continue until their expiration dates. As these licenses expire, the holders will be allowed to renew as regular Hobby Divers, provided all reports have been filed.

Weekend Hobby Licenses were temporary two-day licenses designed to allow non-residents to collect during a brief visit to the state. These licenses were issued by dive clubs and dive shops. Unfortunately, few holders of Weekend Licenses ever reported their finds to the Institute, and many of the Weekend Licenses issued were to resident divers who had allowed their individual licenses to expire and wanted to collect before they had submitted a renewal.

Wreck of the *Golden Spike*

By Lynn Harris

Julian Weston of Mount Pleasant noticed some unusual spikes and nails protruding from the mud as he walked along the bank of the Wando River at low tide earlier this year. He inspected these items more closely and excitedly concluded that he was looking at part of a large shipwreck. He immediately contacted the Maritime Research Division Field Office in Charleston. After an initial site assessment, Carl Naylor, Joe Beatty, and I returned to the site with Weston to conduct some preliminary recording. Mike Ameika, College of Charleston internship student, and a participant from our recent public field training course, Barbara Merchant, accompanied by her two sons James and Robert assisted with the project.

The wreckage (38CH1931) lay on a small beach adjacent to a new subdivision currently under construction. Exposed timbers consisted of a keelson, keel, outer hull planking, and floor timbers extending 13.30 meters (43 feet 8 inches) out of the muddy river water. The outer hull was sheathed with Muntz, an alloy of copper and lead that was first used in the mid-1800s. The fastenings were comprised of a high concentration of brass spikes and long copper drift bolts. The floor timbers were situated very closely each other, and butting against each other on the keel. Numerous other metal concretions lay on the site. We are currently waiting for the results of the samples taken off the wreck to determine what types of woods were used.

We came across some interesting and possibly pertinent information when doing background research on vessels wrecked or salvaged in the vicinity of Charleston. On May 10, 1929, the dredger Hallendale, while working in the harbor, accidentally encountered the wreckage of a submerged vessel. Henry F. Rivers, U.S. Army Corps of Engineers employee and supervisor of a dredging operation executed on Town Creek, wrote a description of the discovery in his logbook.

"Its ribs were 12' X 12' mahogany timbers, butting each other on the keel. They were solid but as usual when sunken timbers are exposed they dry rot in a short time...Beautiful handmade brass spikes & long copper drift bolts hold the hull together."

Rivers concluded that these were the remains of a ship dating back to the Civil War-the Confederate receiving ship—CSS *Indian Chief.*

"The *Indian Chief* was a 3-mast schooner of heavy timber construction sheathed with Muntz metal. Appearances indicated it to be 150' long. Removal completed July 7, 1929," Rivers noted in his logbook.

We are not suggesting that this wreckage is the remains of the CSS *Indian Chief,* but it has some similar construction details. There is a possibility that it is of the same vintage and may be associated Civil War activity in the general area.

Barbara Merchant, her son, Julian Weston, and Carl Naylor mapping the Golden Spike wreck. (SCIAA photo by Lynn Harris)

Between July and August of 1929, the U.S. Corps of Engineers found three more wrecks. These were identified as former Confederate navy vessels CSS *Palmetto State*, CSS *Chicora*, and CSS *Charleston*. Rivers describes the CSS *Chicora* as 150 feet long, 35 feet in beam and a 12 foot depth of hold. Armor: two layers of iron plating laid upon a 22 inch backing of oak and pine. Plating was continued below the waterline and also covered the ram that was a strong elongation of the bow. 500 tons of iron used in her armor and she was propelled by an engine with a 30-inch diameter cylinder and 26 stroke driving a three bladed screw eight feet in diameter. Battery: 2-9 inch smooth bore guns and 4 rifles, 32-pounders each.

Historians believe there were probably more trained seamen in the *Charleston* squadron than any other. Many were enlisted foreigners. In contrast to the other Confederate squadrons, three African Americans served aboard the ironclad CSS *Chicora*. The crews of the Charleston squadron had a reputation of being well trained, very disciplined and having a respect for their officers. The vessels were known as the cleanest and of great credit to the Confederate navy.

There are a number of associations between these vessels and the *H.L. Hunley*. In October 1863, the *H.L. Hunley* practiced numerous dives under CSS *Indian Chief* for training purposes. The *H.L. Hunley* sank, resulting in the death of the crew and inventor Horace Hunley, although the submarine itself was recovered. In November of the same year, Lieutenant George Dixon, commander of the *H.L. Hunley*'s last mission, obtained permission from General Beauregard to ask for volunteers for the submarine from the crew of CSS *Indian Chief*. Despite the fact that only a month before these sailors had witnessed the fatal sinking of the *H.L. Hunley*, there were volunteers. Two other confederate vessels, CSS *Chicora* and CSS *Palmetto State* also supplied volunteers for the earlier crews of the *H.L. Hunley*.

Julian Weston marks extent of wreck site for mapping. (SCIAA photo by Lynn Harris)

By February 1965, the Confederate forces were unable to defend the city any longer and evacuated. Military equipment that could not be carried, as well as any excess munitions stores, was destroyed so that they would not fall into the hands of the Federal troops. Out in the harbor, anything that might be of value of the occupying army was also scuttled. Among the ships sunk were CSS *Chicora*, CSS *Palmetto State*, *CSS Charleston*, and CSS *Indian Chief*.

In his journal, Rivers also provides information about the recovery efforts: "Congress appropriated $25,000 for the removal of The *Charleston* alone; by use of a clamshell bucket, with manganese steel teeth and plenty of dynamite, we removed all four wrecks for $15,00."

The artifacts recovered included pieces of the ship structures, shells with "blunt ends, some with conical points, and some with pyramid shaped points," and an amber-colored whiskey flask indented to make it comfortable to hold in one hand.

Le Prince Search Continues in Spain and in Port Royal Sound

James D. Spirek

Chester DePratter and I were awarded an Archaeological Research Trust grant to fund archival research in Spain and field work in Port Royal Sound to continue our efforts to locate the remains of *Le Prince*, a French corsair wrecked in 1577, and other shipwrecks in the vicinity. Besides the ART funds, we used funds from a Department of Defense Legacy grant to search for several Civil War naval supply vessels also lost on the shoals of Port Royal Sound. The ART grant originally was intended to support remote sensing operations in continuation of the previous year's endeavors in Port Royal Sound. While planning this next phase of the project, we received an email from our researcher in Spain, Claudio Bonifacio. He reported having a possible lead concerning a Spanish salvage attempt to recover unspecified cannons in Florida, perhaps off *Le Prince*. If this salvage effort was related to *Le Prince*, our efforts to locate the French corsair would have to account for this possibility, as the Spanish often salvaged accessible shipwrecks. Essentially, if iron cannons were removed from the shipwreck site, their absence would dramatically alter the magnetic signature of the wreck site. More importantly, this information might also contain more precise locational information to aid in finding the shipwreck.

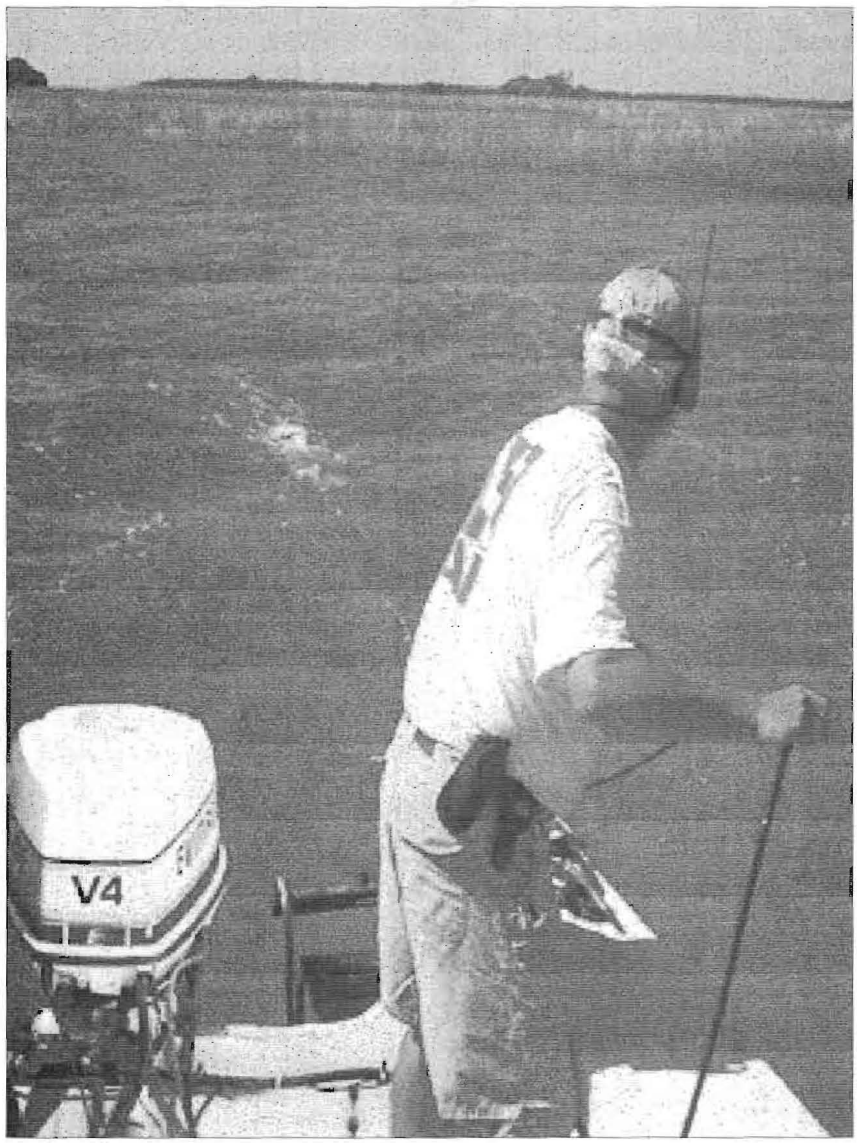

Figure 1: Joe Beatty reels in the magnetometer sensor in Station Creek. (Photo courtesy of Jack Melton)

Archival Research

Amending the grant to cover Bonifacio's research costs, we directed him to follow the salvage lead in the Archivo de las Indias General (AGI) in Seville, Spain. Bonifacio located a lengthy document, over 160 pages long and in very poor condition, of an inquiry into the reputed salvage of the cannons from Florida. For all the document's length, Bonifacio could not determine the location, the number, or even if the cannons were retrieved. He also located a couple of other documents related to the salvage expedition, but these records again failed to shed light on the endeavor. In addition, Bonifacio found several other documents pertaining to the ship and French corsairing in general.

Based on the information in our files concerning the shipwreck and events at Santa Elena, we do not believe that this salvage attempt, or any other, was made on *Le Prince* by the Spanish. This belief is founded

on the incompatible timing between when the Spaniards became aware of the wreck and when the salvage endeavor was organized. The shipwreck occurred in early January 1577, and the salvage attempt was preparing in Havana around mid-spring of that year. The first indication, however, that the Spaniards became aware that *Le Prince* shipwrecked is in October 1577, when the new Governor of Florida, Pedro Menendez Marquez, arrived from Havana to St. Augustine in that month. Marquez reported upon his arrival the news that the corsair wrecked off Santa Elena. Returning to Santa Elena and finding the poop deck of the wrecked galleon in the sound, Marquez remarked that he did not know where the hull struck on the shoals. This assessment of when the shipwreck was first known to have occurred but not exactly where, and when the salvage effort was planned, do not suggest this effort was directed towards retrieving cannons from the corsair. Perhaps, the salvage endeavor was to recover the cannons left at Santa Elena, or alternately, from another shipwreck located somewhere else along the Florida coast. Documents in our possession detailing the re-establishment of Santa Elena in 1577 and until its final abandonment in 1587 fail to reveal any salvage attempt made on *Le Prince* during this period. We believe that any large iron components carried by *Le Prince*, that is cannons and anchors, are most likely still in proximity to the shipwreck, and therefore acting as magnetic beacons to aid in locating the remains of the corsair.

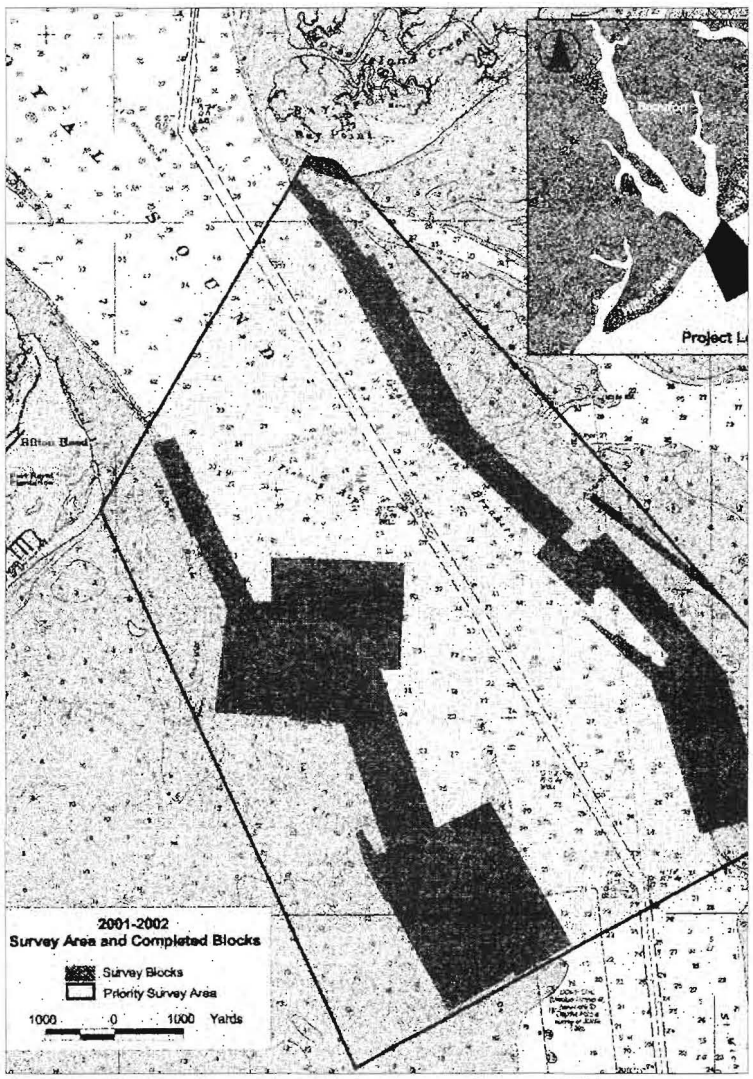

Figure 2: Main survey area and completed survey blocks. (SCIAA photo)

Marine Remote Sensing Operations

During two separate excursions, April 8-12 and September 30-October 7, 2002, we resumed marine survey operations to locate *Le Prince*, US naval vessels, and other shipwrecks in Port Royal Sound (Figure 1). The weather was excellent, especially during the second period with flat seas and good tidal windows which facilitated remote sensing operations on and along the treacherous shoals of the Great North Breakers and Joiner Bank Using SCIAA'S ADAP III marine remote sensing equipment, we increased our survey coverage in the sound to 8.4 square miles of bottomland. Our survey transects total 653 linear miles, or a distance equivalent to traveling from Port Royal to the Mississippi River. In the main priority area, we have encompassed 6.5 square miles, or about 25 percent of the 23.7 square mile area (Figure 2). Another 353 magnetic anomalies were detected in the new survey area. Of these, several anomalies bear further investigation to determine their potential historical or archaeological significance. The majority of the magnetic anomalies, however, were small 1 to 10 gamma anomalies, suggestive of small, single-source ferrous objects. We plan to continue surveying in the main area next year, as well as implementing ground-truthing operations to identify the sources of prioritized magnetic or acoustic anomalies detected during the course of the survey.

During our survey of a section of Station Creek, we examined from a distance an iron object lying about 100 yards in the marsh (Figure 3). It

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appears to be an iron-hulled vessel, about 50 feet long or so and proud of the marsh by 5 feet, with some wood planks piled on the deck. Nobody, however, felt adventurous enough to slog through the marsh to get a closer look at the object. We decided to wait until another occasion to investigate the hulk when we could take the jonboat and get closer to the vessel by threading our way through the small tidal creeks during high tide.

We had several volunteers join us during the October survey. Jack Melton from Kennesaw, Georgia, a recent graduate of our Field Training Course, volunteered for three days. ART board member Bill Behan and a friend, Jim Scott, visited on the last day of the survey during an unusually calm day on the Great North Breakers (Figure 4). We appreciated their help and support while they were with us.

Dr. DePratter and I would like to express our thanks to the Board of Trustees of the Archaeological Research Trust for providing the funds to search for Le Prince and other shipwrecks and for their continued support of this research project. Additionally, funds from our Naval Wreck Survey grant allowed us to survey for Navy shipwrecks in the same locale. If you would like to help in our efforts to search for shipwrecks and other submerged archaeological artifacts, please consider sending a tax-deductible contribution to the Archaeological Research Trust Fund earmarked for the Port Royal Sound Survey.

Figure 3: Iron-hulled vessel in marsh around Station Creek. (Photo courtesy of Jack Melton)

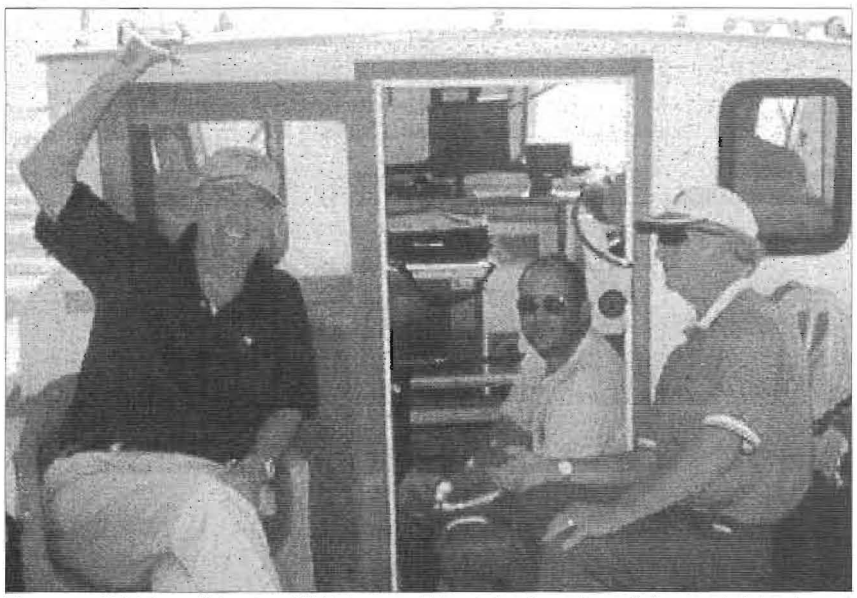
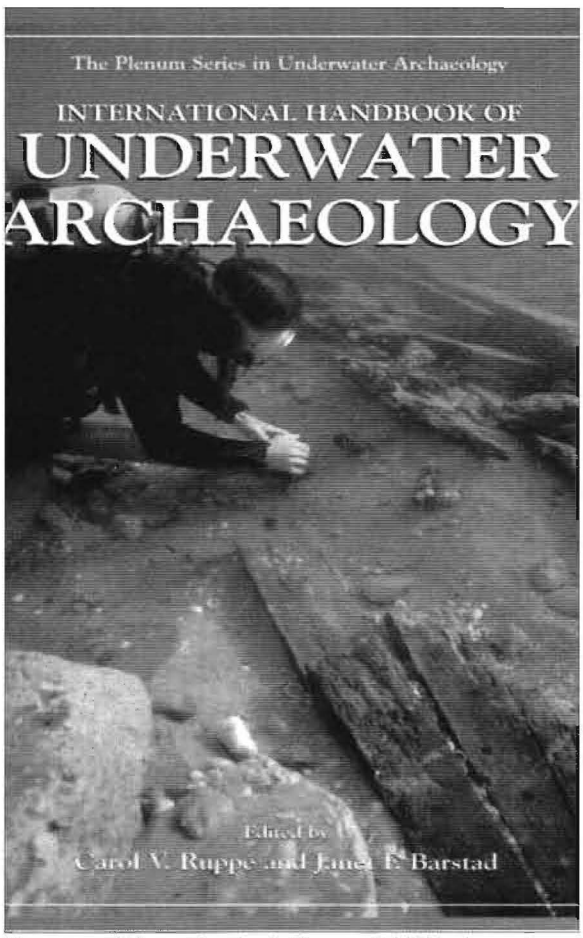


Figure 4: ART Board Member Bill Behan and friend Jim Scott from Callawassie Island, with Jim Spirek in background, on the Great North Breakers. (SCIAA photo)

The International Handbook of Underwater Archaeology Embarks on Maiden Voyage

By Christopher F. Amer



The cover of Kluwer Academic/Plenum Publishing's newly released The International Handbook of Underwater Archaeology. (Cover photo by Shelley Wachsmann)

Last September, Kluwer Academic/Plenum Publishing released *The International Handbook of Underwater Archaeology* (Figure 1, cover of the *Handbook*). The profession and public alike have eagerly awaited the release of this milestone publication. It has been more than 35 years since Dr. George Bass completed excavation on the Cape Gelidonia wreck that heralded in the age of archaeology underwater. Underwater research is now a confirmed sub-discipline of the field of archaeology. However, while the growth of archaeological research of both submerged prehistoric and historic sites has been rapid, the literature published on the work has not kept pace with new developments in the field. Carol Ruppe and Jan Barstad, the editors of this 881-page to me, designed the *Handbook* to fill that literature gap. The *Handbook's* appeal is widely varied, from underwater archaeologists to maritime historians, educators to scientific specialists, and from graduate students to the general public. The editors have adopted a "geographic and topical approach" and include in the 48 chapters perspectives on technology, law, and public and private institutional roles and goals, as well as a look to the future of the sub-discipline.

On January 16, 2003 Kluwer Academic/Plenum Publishing hosted a book launching reception that was held in conjunction with the 36th Annual Conference on Historical and Underwater Archaeology in Providence, Rhode Island. The reception, attended by well over 150 people, included many of the book's chapter authors. The function provided archaeologists attending the conference with an opportunity to meet some of the movers and shakers in underwater archaeology today, while allowing authors to sign copies of the book for each other and the public.

Editor Jan Barstad (left) watches as Dr. Robert Neyland (Chairman of the Advisory Council for Underwater Archaeology), signs a copy of the Handbook. (SCIAA photo by Christopher F. Amer)

Authors mingle with other archaeologists during the reception. (SCIAA photo by Christopher F. Amer)

Savannah River Archaeology Program

Investigating Environmental Change on the Coastal Plain of South Carolina

By Barbara E. Taylor, Savannah River Ecology Laboratory, University of Georgia and Mark J. Brooks, Savannah River Archaeological Research Program, SCIAA

During the Pleistocene, which began about two million years ago, massive glaciers advanced and retreated in four great episodes. The latest of these retreats ushered in our own era of geologic time, the Holocene.

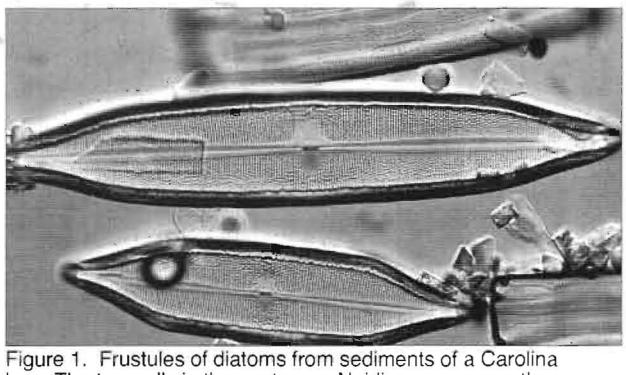


Figure 1. Frustules of diatoms from sediments of a Carolina bay. The two cells in the center are Neidium sacoense; the larger cell is about 0.1 mm in length. (Photomicrograph courtesy of Evelyn Gaiser)

Although the continental glaciers never extended into South Carolina, they profoundly affected the climate and landscape here. Palaeoenvironmental records from Carolina bays and other wetlands provide clues to understanding how the Coastal Plain responded to global climate. Because the region has been well-populated with humans since at least 13,000 years before present, near the end of the Pleistocene, these changes are important to understanding human palaeoecology.

Palaeoenvironmental records of the Coastal Plain take diverse forms. From wetland basins, organic carbon, particularly charcoal, can yield radiocarbon dates useful for dating sediments up to 30,000-40,000 years in age. Pollen is perhaps the best-known of the fossil materials in wetland sediments, but other plant and animal remains can also be found. Frustules of diatoms, a group of algae, are often preserved in wetlands. The frustule (Figure 1) is an ornamented shell-like structure, composed of a matrix of silica, that contains the diatom cell. Because many diatom species have narrow tolerances for chemical or physical conditions, the species composition of fossil diatoms can be used to infer characteristics of the environment. Remains of freshwater sponges are also useful. Sponges are common but inconspicuous, often growing as thin crusts on submerged wood. They are not rich in species, but their spicules, needle-like skeletal structures composed of silica, are robust, often lingering in the sediments after more delicate materials, such as frustules of diatoms, have decomposed. Spicules indicate that sediments were deposited under aquatic, rather than terrestrial, conditions.

Terrestrial habitats adjacent to the wetlands often provide additional records. Archaeological sites can document shifts in the type and intensity of human activity, which may reflect changes in the local environment. Archaeological sites can also provide dates for geologic events. The time of burial for wind-deposited sands can be estimated using optically stimulated luminescence (OSL), a relatively new method that dates time since last exposure to sunlight. This method is a valuable complement to radiocarbon dating, extending the range by about 80,000 years. Further, datable material can be obtained from features of the uplands where old organic carbon is seldom preserved.

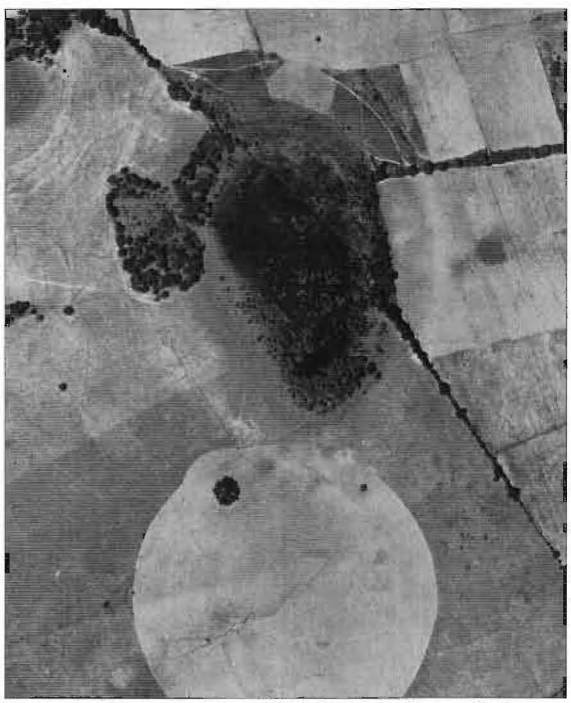


Figure 2. Flamingo Bay on the SRS. Note the ovoid shape; a ridge of sand 1-2 m deep lies along the eastern (right side) edge of the basin and extends around the northern (top) and southern (bottom) ends. (1943 aerial photograph courtesy of USDA archives)

Figure 3: Barbara Taylor retrieving a core from a wetland at Fort Jackson. (SRARP photo by Mark Brooks)

Our current studies focus on three times of change: episodes of climate resulting in development of Carolina bays during the late Pleistocene; a hydrologic threshold during the mid-Holocene; and a possible moister episode beginning in late prehistoric times. The research is a cross-disciplinary effort. Current and recent collaborators include: Dr. Christopher Clement, South Carolina Institute of Archaeology and Anthropology; Dr. Evelyn Gaiser, Florida International University; Dr. Robert Gardner, University of South Carolina; Dr. Andrew Ivester, West Georgia State University; Mr. Peter Stone, South Carolina Department of Health and Environmental Control; and Dr. Eric Wright, Coastal Carolina University. The research has been sponsored by the United States Department of Energy (Savannah River Site—SRS), by the natural and cultural resource management program at Shaw Air Force Base (Big Bay), and by the South Carolina National Guard (Fort Jackson).

Sand dominates the sediments of the Coastal Plain in South Carolina. Some climatic regimes have resulted in wind-driven formation of localized dune fields, ridges, and other features, including the oval, northwest-southeast oriented depressions known as Carolina bays. At Flamingo Bay (Figure 2), a small (0.7 km length) Carolina bay on the SRS, OSL dates from the base of the sand rim indicate that deposition began around 110,000 years ago, probably near the beginning of the last glacial period. Dates of 40,000 years (OSL) and 10,000 years and later (temporally diagnostic artifacts) from overlying strata show that episodes of deposition occurred later in the Pleistocene and into the Holocene. The sand rim of Bay 40, another Carolina bay on the SRS, yielded a date of 75,000 years ago.

Figure 4: Bruce Penner and Dave Crass excavating a 1 m x 2 m test unit on the eastern edge of Flamingo Bay with Adrienne DeBiase on the screen. (SRARP photo by Barbara Taylor)

These dates establish that Carolina bays are old features of the landscape and indicate that modification of the rims occurs in episodes. Correspondences between the dates and global climate records from Arctic ice cores suggest that the earlier episodes of bay formation and development occurred during intervals of milder climate. Because the margin of error is large on the earliest OSL dates, however, additional evidence will be required to establish a pattern that we can interpret with full confidence.

Big Bay, a much larger (5 km length) Carolina bay on the Poinsett Electronic Combat Range of Shaw Air Force in Sumter County, South Carolina, may provide further resolution on the timing of these episodes. Big Bay contains a series of well-separated concentric ridges that represent former shorelines of the bay. The interior forest of the bay burned in spring of 2001, facilitating access to these features, and we are presently dating a series of OSL samples from the innermost to the outermost ridges.

More recent OSL dates from interior river dunes, clustering in the range of 40,000 to 30,000 years ago in South Carolina and 30,000 to 15,000 years ago in Georgia, suggest that these features were most active during the colder conditions before and during the last glacial maximum. Active movement of these sands would have required locally sparse vegetation, and the dates thus imply times of drier, as well as colder, conditions.

Organic sediments from the wetlands within Carolina bays typically yield basal dates much younger than the known ages of the bays. Most of them probably reflect transitions to moister climate, resulting in development of wetlands and accumulation of organic materials in the basins. Accumulated organic material would oxidize

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during periods of prolonged desiccation under drier climates, so that only material from the most recent moist episodes should be preserved.

Evidence from two basins on the SRS suggests transitions to moister conditions during the mid-Holocene and, unexpectedly, during late prehistoric times. At Flamingo Bay on the SRS, the evidence comes mainly from radiocarbon dates. The oldest preserved organic material from the deepest part of the basin was deposited 4,500 years ago. Although diatoms and pollen have not been preserved, sponge spicules indicate the presence of standing water, at least seasonally. The oldest organic material from shallower portions of the basin was deposited much more recently. On a shallow ridge (surfaces 80-90 cm above the deepest point) in the interior of the basin, organic materials began to accumulate only 300 years ago.

Extensive modern records from several Carolina bays indicate that inundation for more than 50% of the year is required for preservation of datable organic material. We used a 14-year record of water depth at Flamingo Bay and corresponding weather records from Blackville, South Carolina, to estimate precipitation thresholds for preservation at different elevations within the basin. Modern precipitation averages 120 cm annually. The analyses suggest that a prolonged episode of about 100 cm annual precipitation occurred prior to 300 years ago. The record of fossil diatoms from Peat Bay, another wetland on the SRS, corroborates this inference and suggests further that this threshold was reached by progressive, rather than abrupt, increases in precipitation beginning about 1,600 years ago. Conditions before 4,500 years ago, the oldest date from the deepest part of Flamingo Bay, were likely somewhat drier (perhaps less than 80 cm annual precipitation).

Figure 5: Mark Brooks and Evelyn Gaiser conducting reconnaissance coring of sediments from a small wetland on the SRS. (SRARP photo by Barbara Taylor)

These changes inferred from palaeoenvironmental records correspond roughly to times of substantial change in prehistoric cultures. Mid-Holocene increases in moisture may have facilitated the transition to the more settled economies of the Late Archaic, Woodland, and Mississippian cultures. As David Anderson has suggested, fluctuations in moisture could have influenced agricultural production and political stability of the Mississippian cultures. Both of these hypothesized palaeoenvironmental changes require further study. We have found a well-preserved, potentially informative sequence of pollen-bearing sediments dating from late Pleistocene to modern times at a wetland on Fort Jackson, and we continue to seek additional sites.

This research contributes pieces to the pictures of changing prehistoric climate and landscape. Prehistoric processes shaped the modern landscape. Knowledge of this history can help us to understand these processes and to anticipate directions of future change.

Figure 6: Andrew Ivester, Eric Wright, and T. Brooks coring sands on an inner ridge of Big Bay. (SRARP photo by Barbara Taylor)

Exploring Fort Moore

By Mark Groover and Jonathan Leader

Forty-five years after the founding of Charles Town in 1670, a series of Native American attacks upon settlers occurred between 1715 and 1718. Called the Yemassee War, this conflict began in Beaufort and Port Royal and spread through the settled coastal area. The Yemassee War was incited by perceived European encroachment upon Native American territory. Disputes between Indians and colonists involved in the deerskin trade also contributed to the conflict.

As a response to the war beginning in 1715, the colonial government in South Carolina constructed Fort Moore in Beech Island near Augusta, in addition to forts near present day Columbia (Fort Congaree), Savannah (Palachacolas Fort), and Port Royal Sound (Beaufort Fort). These early posts were established to provide protection to settlers along the colonial frontier and help regulate the deerskin trade with Native Americans (Jones 1971).

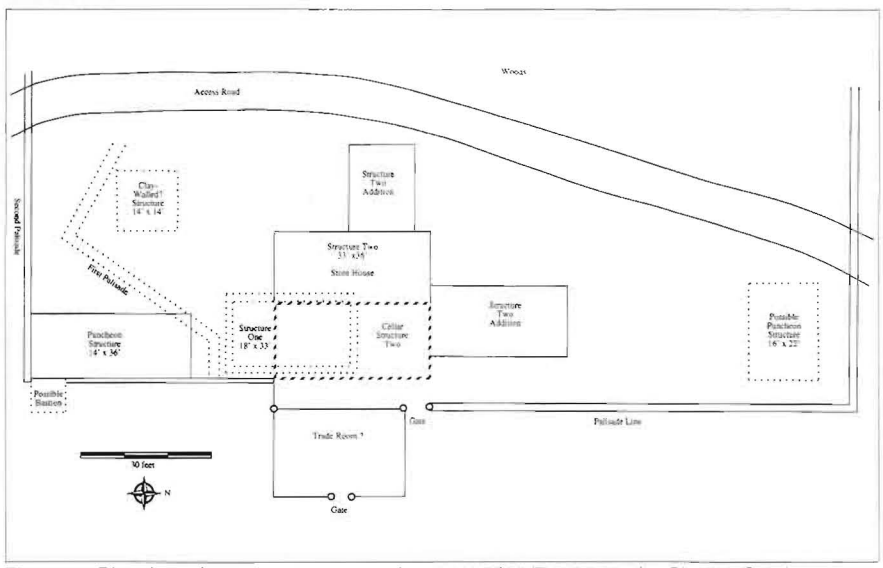

Figure 1: Planview of palisaded compound excavated at Fort Moore by Stanley South and Richard Polhemus in 1971. (SCIAA/SRARP figure drafted by George Wingard)

Fort Moore, strategically located on a tall bluff overlooking the Savannah River, was named after colonial Governor James Moore. Fort Moore was constructed in the winter of 1715 and was occupied until 1766. Fort Moore, both a military fort and a trading post, was a frontier cultural crossroads. Interestingly, during its first year of operation in 1716, half a company of African colonial militia manned the fort. Throughout the remainder of its history, European soldiers, deerskin traders, and enslaved Africans inhabited the outpost. Native Americans, such as the Creek, Apalachee, Yuchi, and Chickasaw, also traded at Fort Moore. During the period of Indian trade in the colony, Native Americans exchanged dressed deerskins for firearms, shot, powder, cloth, metal tools, and other items manufactured in Europe. During the latter years of its history, other trading posts were established in the small community adjacent to Fort Moore. Further, the frontier foothold originally established by the fort later developed into New Windsor Township, one of several backcountry townships established in the 1730s. After 1766, Fort Moore was eventually deserted when its role in the deerskin trade was eclipsed by Fort Augusta located across the Savannah River in Georgia (Maness 1986). However, the Fort Moore area continued to be inhabited by residents of New Windsor Township.

For years, archaeologists have known that Fort Moore was situated somewhere on the river bluff where the state highway crosses the Savannah River. However, the exact location of the fort has never been conclusively determined archaeologically, although several episodes of fieldwork have been conducted on the river bluff since the 1960s.

One of the most important episodes of fieldwork at Fort Moore occurred in 1971, when Stanley South and Richard Polhemus, archaeologists with the South Carolina Institute of Archaeology and Anthropology (SCIAA), directed salvage excavations at the river bluff with the help of local volunteers. The salvage work was conducted because a portion of the river bluff on private property was being developed for a subdivision. In a race against bulldozers, long exploratory trenches were excavated across a large open field in the area to be developed. The trenches resulted in the discovery of a palisaded compound containing several earthfast structures (Figure 1). The portion of the compound that was subsequently defined by the field crew was approximately 200 x 100 feet in size. Interestingly, the compound contained a rectangular

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earthfast structure with a deep cellar that was thought to be the remains of a trader's house. Although South and Polhemus discovered compelling archaeological information, they hesitated to definitively conclude that the palisaded enclosure was Fort Moore. Unfortunately, the portion of the palisaded compound discovered in 1971, was eventually destroyed by earth moving equipment.

Thirty years later in 2001, Fort Moore once again became the subject of renewed interest when local residents learned that the remaining undisturbed portions of the river bluff might be developed in the near future. Concerned members of the public subsequently contacted Jonathan Leader, South Carolina State Archaeologist, who in turn organized a cooperative research effort between SCIAA, staff members in the Savannah River Archaeological Research Program (SRARP), a satellite office of SCIAA, and Chris Judge with the South Carolina Department of Natural Resources. The purpose of this collective effort was to identify the location of Fort Moore and potentially recommend that it be purchased from private landowners through the South Carolina Heritage Trust, a state-operated program that preserves important archaeological sites.

Limited site survey and testing were conducted at Fort Moore in December 2001. Although relevant information regarding the condition of the river bluff was collected during this effort, the location of the fort was not identified. Following this stint of fieldwork, all available background information related to Fort Moore was scrutinized again for relevant clues. Fortunately, Richard Brooks with the SRARP had a copy of the detailed base map from the 1971 excavations conducted by South and Polhemus (Figure 1). After consulting this map, it appeared very likely that Fort Moore may have actually been previously discovered in 1971. A second field expedition to Fort Moore was then subsequently organized.

In August 2001, Stan South returned to Fort Moore. In textbook style, South relocated his excavation benchmark that he had placed along a fence line 30 years ago. South then quickly relocated the 1971 excavation area originally containing the palisaded compounded. A 1 X 1 meter test unit was excavated in the protected wooded area adjacent to the open field where the enclosure had been excavated. The test unit contained a very dense concentration of colonial period, consumption related artifacts typical of forts and trading posts—bottle glass, tobacco pipe fragments, lead shot, colono ware, and imported ceramics. The excavation square clearly demonstrated that abundant, undisturbed archaeological deposits were still present at the site.

Two months later in October, a third round of fieldwork was conducted at Fort Moore. During this latest effort, it was hoped that half or more of the palisaded compound discovered in 1971 might still be preserved along the wooded river bluff. To define the spatial extent of the compound and test this informal hypothesis, a 70 X 140-meter shovel test pit grid was excavated in the woods immediately adjacent to the 1971 excavation area. The results of this effort demonstrated that a preserved area of colonial period resources dating to the first half of the 18th century is located within the wooded area on the river bluff. Further, the shovel test pit survey demonstrated that an area containing densely deposited artifacts parallels the modern-day fence line, and corresponds to the location of the

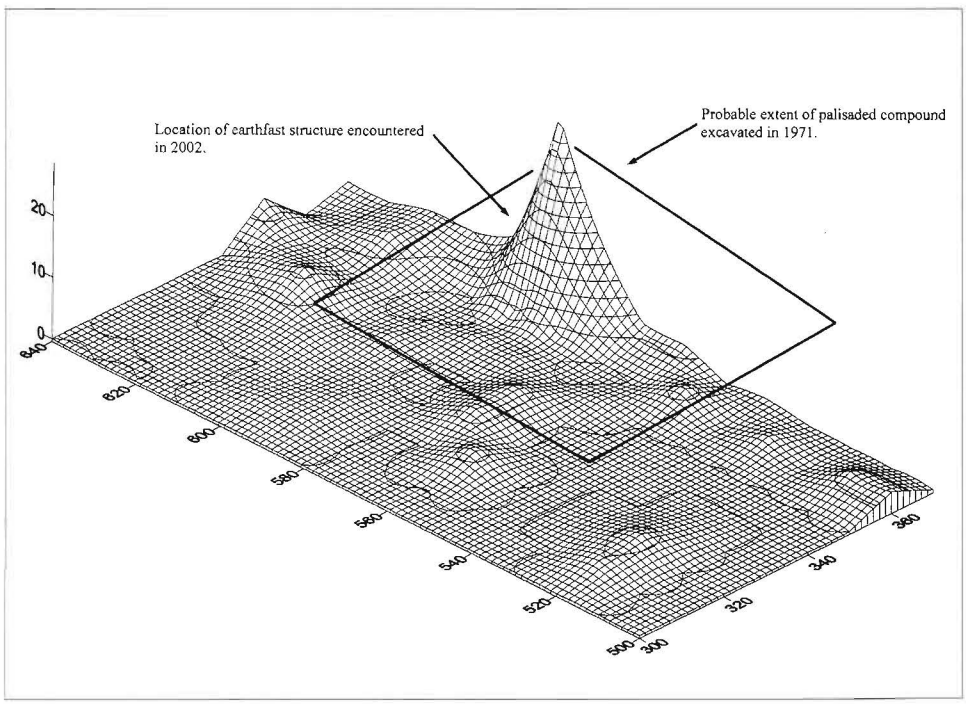

Figure 2: Artifact density map of wooded area investigated in 2002, immediately adjacent to palisaded compound excavated in 1971. (SCIAA/SRARP figure drafted by Mark Groover)

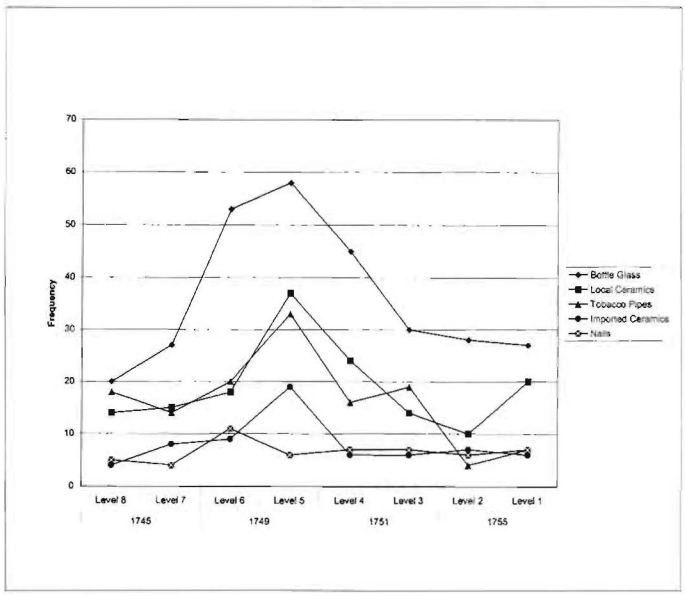

Figure 3: Artifacts in motion: stratigraphic-temporal distribution of artifacts recovered from test units excavated in 2002 at Fort Moore. (SCIAA/SRARP figure drafted by Mark Groover)

palisaded compound investigated by South and Polhemus in 1971 (Figure 2). Historical sources suggest that Fort Moore was approximately 150 X 150 feet in size (Maness 1986:68). The area investigated in the woods indicates that the palisaded compound may have originally been approximately 200 X 200 feet in size, which approximates the known size of Fort Moore.

To further determine if intact archaeological features and deposits are preserved in the wooded area at the river bluff, three 1 X 2-meter test units were excavated in October. The test units indicated that at least two or more structures are preserved in the wooded lot. The area containing a heavy concentration of artifacts defined by the shovel test survey likely contains the remains of a dwelling constructed of wooden timbers seated in postholes. Called earthfast architecture, these wooden frame dwellings, similar to barns and outbuildings still constructed today in the rural South, were prevalent dwellings during the 1700s and early 1800s in South Carolina. The recovery of nails and especially window glass, typically rare on colonial frontier sites, from the test unit further supported the interpretation that this spot contained the remains of a structure. An excavation unit immediately north of the probable earthfast dwelling contained a clay hearth with burned animal bones and what appeared to be a segment of a narrow wall trench formed from banked clay. The archaeological deposits in this structure, perhaps reflecting Native American or West African inspired architectural traditions, contained tobacco pipe stems and hand headed cut nails. The cut nails date to the late 18th century, suggesting this dwelling or activity area was used after the fort was abandoned in 1766.

In addition to the identification of areas containing structural remains dating to the Fort Moore period and later, artifacts recovered from site testing in October also revealed the interaction and exchange that had occurred at the site among different cultural groups. The three test units were excavated in thin, 5-centimeter levels that allowed the sequencing and dating of artifacts by small stratigraphic intervals. Sequencing the artifacts by levels indicates that the artifacts were mainly discarded between the 1740s and 1750s (Figure 3), encompassing an approximately 20-year interval. During this time period, bottle glass, tobacco pipe fragments, colono ware made by Native Americans and enslaved Africans, and imported ceramics manufactured in Europe were deposited in abundance near the earthfast dwelling. The artifacts also indicate that the residents of the site were likewise using a large proportion of colono ware, probably manufactured by local Native Americans. Non-European ceramics comprise 71 percent of the total ceramic sample obtained from site testing. The surfaces on the sherds of the locally made ceramics were burnished, brushed, and incised, with pinched vessel rims evident on some examples—all decorative embellishments consistent with Native American contact period assemblages. Twenty-nine percent of the ceramic sample is composed of European manufactured ceramics, mainly decorated delftware and lead glazed earthenware. Native Americans who came to the river bluff to trade also fashioned tools from bottle glass. Typical finds at contact period sites, a uniface, a small blade, and a spokeshave-like tool made from bottle glass were recovered from site excavations, along with a glass trade bead. Considered together, the features and artifacts encountered at Fort Moore provide a fascinating glimpse of colonial cultures in transition along the middle Savannah River valley.

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The Upper Paleolithic of the Maritime Region in the Russian Far East

By J. Christopher Gillam and Andrei Tabarev

In recent years, Dr. Andrei Tabarev of the Institute of Archaeology and Ethnography in Novosibirsk, Russia, and colleagues from Vladivostok, Khabarovsk, Komsomolsk-on-Amur, and elsewhere have recorded numerous obsidian (volcanic glass) quarry sites and habitation sites dating to the final Upper Paleolithic (ca. 20,000-10,000 years ago) at the end of the last Ice Age (late Pleistocene). Sometime after 20,000 years ago, humans established themselves in the river valleys of the interior rolling mountains and coastal zone of the Maritime Region in the Russian Far East (Fig. 1). These people lived in small, extended family groups known as bands that probably consisted of fewer than 100 individuals per band. Archaeological evidence suggests that they were a society practicing a hunting, fishing, and gathering way of life (hunter-gatherers).

The climate during the late Pleistocene was colder than today, but the region was not glaciated due to cold, dry winter air that penetrated from Siberia in winter and the relatively warm, moist air from the Sea of Japan and Pacific Ocean in summer. The temperature contrast between winter and summer was probably greater than that of today presenting these early populations with marked seasonal changes in their environment. They were likely mobile populations in warm months moving between the coast and mountain zones on a seasonal basis and focusing their way of life on the region's numerous river systems. Land mammals, seasonal salmon runs, and vegetation in the river valleys probably offered abundant resources on a seasonal basis. The abundance of the warm months was likely met with harsh, dry winters that required the storage of food to last throughout the year. Thus, warm months were likely spent moving from place-to-place to gather abundant resources, whereas the winter months may have been largely sedentary reflecting the use of stored foods.

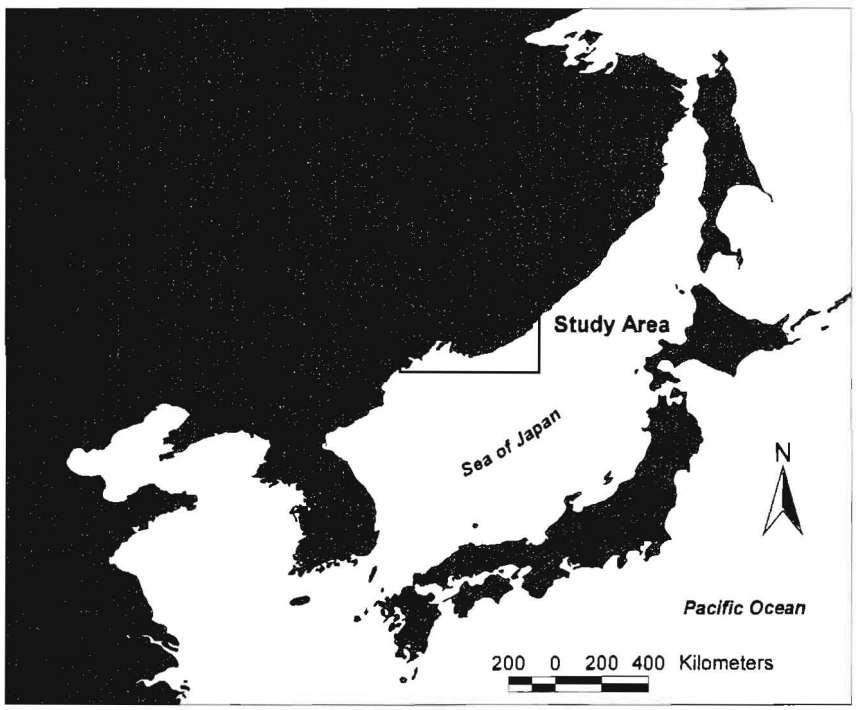

Figure 1. The Maritime Region of the Russian Far East. (Drawing courtesy of Julia Tabareva)

The stone tool (lithic) technology of the region was complex and shares many technological traits with the Paleoindian and Archaic period toolkits of North America. Wedge-shaped microblade cores, conical blade cores, burins, scrapers, and crude bifaces are common in archaeological sites of the region (Fig. 2). Many of these same tool types have been found in the late Pleistocene- and early Holocene-age levels of the Topper site here in South Carolina. High quality obsidian pebbles found in streams of the interior zone were used for the production of stone tools. These small obsidian cobbles were modified using a technique called bipolar reduction and the use of wedge-shaped microblade cores. These techniques produced microblades, multi-facet burins, and scrapers. Primitive bifaces were also produced using large flakes and direct percussion of the cobbles. These obsidian quarry sites are typically at higher elevations than seasonal habitation sites that are not associated with obsidian sources.

Now that the lithic technology and cultural chronology of the region are better understood, research interest is shifting from culture history to understanding the migration, interaction, and exchange

networks of the region. The initial objective of this research is to physically connect the occupation sites and the obsidian source sites throughout the region. This type of geographical research can be conducted using a Geographic Information System (GIS). Using archaeological data provided by Dr. Tabarev (and colleagues) and geographic data from the U.S. Geological Survey (USGS), I have begun to explore the potential paths connecting the habitation sites and obsidian sources throughout the region. Preliminary analyses using least-cost paths analyses illustrate potential corridors of movement from obsidian sources to occupations sites throughout the region (Fig. 3).

The next phase of the project will involve participation in archaeological fieldwork and building a temporal database for each occupation site and obsidian source dating to the final Paleolithic. Fieldwork will be conducted in August 2003 with Russian and Japanese colleagues at two sites in the Illistaya River Basin. The first site, Gorbatka-3, dates to around 13,000-11,000 years before present (final Paleolithic) and is believed to have been a seasonal base camp. Obsidian tools from this site include microblade cores, transverse burins, and bifacial knives, points, and drills. The second site, Osinovka, has a final Paleolithic occupation similar to Gorbatka-3, but also has a controversial component of crude pebble tools dating to 35,000-30,000 years ago. If the hypothesized pebble tools are cultural, then Osinovka is by far the oldest known site in the region.

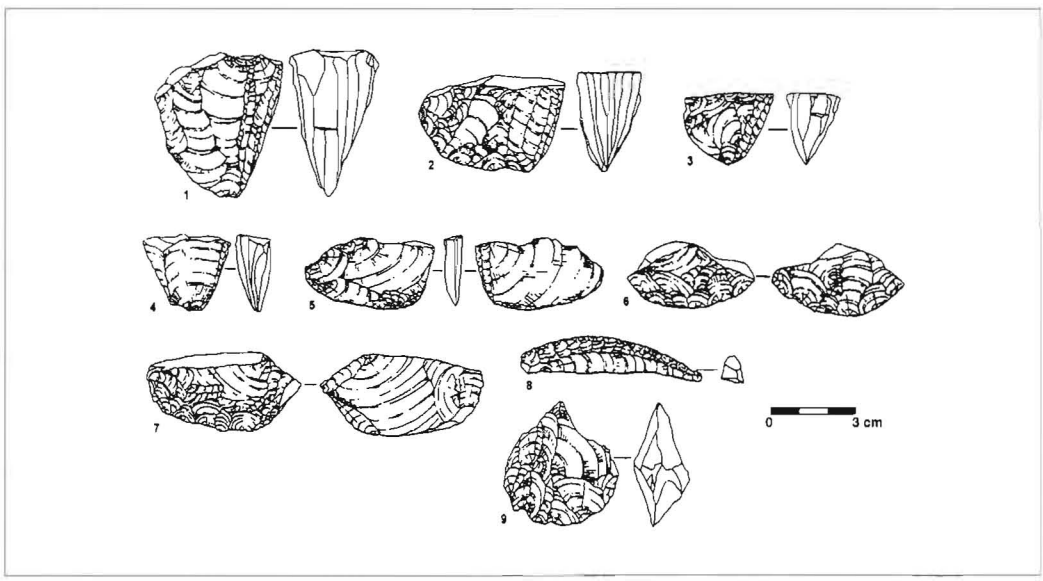

Figure 2. Obsidian microblade cores and preforms from the Firsanova site. (Drawing courtesy of Julia Tabareva)

Private donations are being sought to support the initial phase of the research until grant funding can be acquired. A tax-deductible donation can be made payable to the USC Educational Foundation to support this research. Please note "Paleolithic Connections" on any contributions and send c/o Chris Gillam, SCIAA-CLA-USC, 1321 Pendleton Street, Columbia, SC 29208; (803) 777-8044; < gillam@sc.edu >. A report on 2003 fieldwork and a donor acknowledgment will appear in a subsequent issue of *Legacy*.

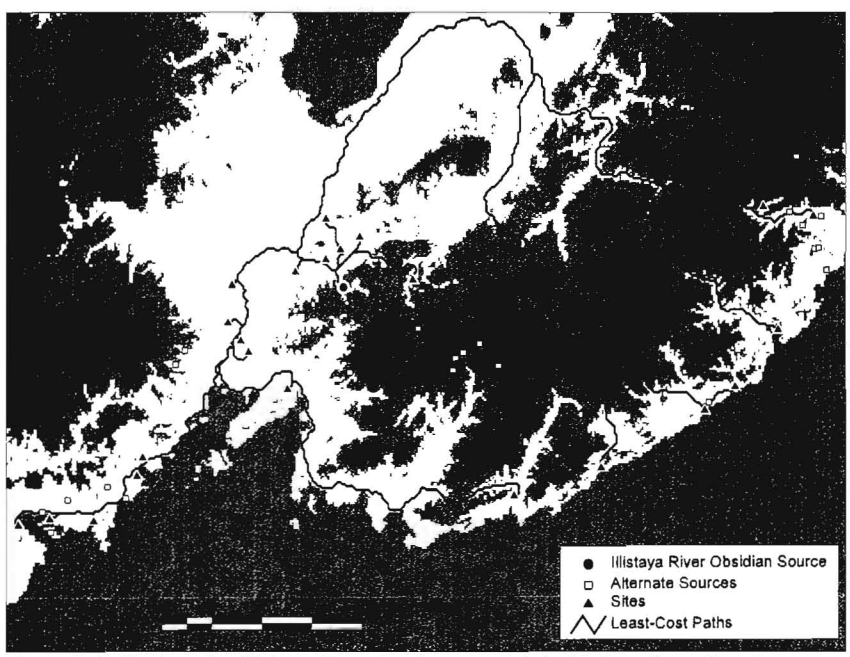

Figure 3. Paths from the Illistaya River obsidian source to habitation sites. (Drawing courtesy of Julia Tabareva)

Research

Backhoes, BBQs, and B Horizons: the 2002 Allendale Paleoindian Expedition

By Albert C. Goodyear

As mentioned in the July 2002 issue of *Legacy*, the Expedition returned for another five weeks to Topper, continuing to uncover significant information about the history of this ancient site. The excavation lasted for five weeks beginning April 28 through May 31, 2002. Once again, the hard-working donor-volunteers signed up for a week or more of fieldwork and made the excavation pits go down level by level, week by week, through the Holocene into the Pleistocene soils. These hardworking folks are listed by week at the end of this article. They deserve much credit for making the 2002 dig such a success.

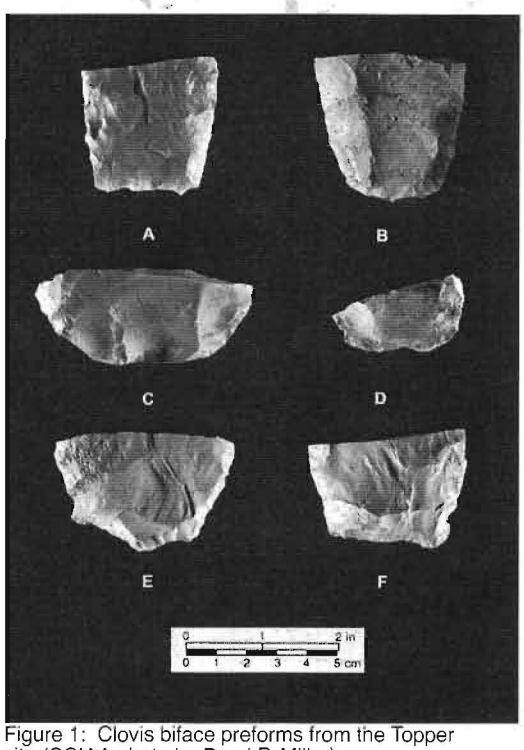

Figure 1: Clovis biface preforms from the Topper site (SCIAA photo by Daryl P. Miller)

Like the last two years, a great deal was accomplished in the pre-Clovis zone, plus this year substantial Clovis lithic remains were encountered in two places. Previously, the presence of Clovis at Topper had been established by the characteristic laterally-thinned and end-thinned preforms (Figure 1). In 2002 the Clovis story at Topper got better including the finding of a base of a fluted Clovis point and what is probably a second Paleoindian point (Figure 2). Another exciting aspect of the dig this year, was the presence of the SC Educational Television film crew (Figure 3). SCETV, with a grant from our host Clariant Corporation, came down each week and documented the progress of our excavation (and the Friday night BBQ). The ETV special "They Were Here: Ice Age Humans in South Carolina" had its premier broadcast statewide October 29, 2002.

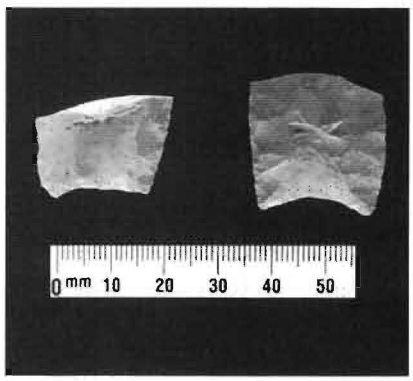

Figure 2: Left, Clovis base from N286.80 / E138.25 @ 97.85 M; Right, possible Paleoindian point base from N243.60 M / E136.73 M @ 98.10 M (SCIAA photo by Daryl P. Miller)

In order to gather additional excavated materials from the pre-Clovis zone, another 4 x 8 m block was excavated immediately to the east of the 2000 season block. For purposes of safety, a 5 x 9 meter unit was initially opened and dug to a meter below surface wherein the excavation was continued downward as a 4 x 8 m unit until reaching the Pleistocene terrace (Figure 3). Backhoe Trench 5 of the 2000 geoarchaeology study was used as the southern safety trench for the deep unit which provided not only safety but ease of access during the excavation. Trench 5, because of its skewed east-west angle, cut into


Figure 3: SC ETV crew filming down in the 5 x 9 m block excavation of the 2002 expedition (Photo by Daryl P. Miller, courtesy of Clariant Corporation)

the southeastern corner of the block excavation subtracting slightly from a full 4 x 8 m unit. Thus, counting this year's block, a total of approximately 96 contiguously excavated square meters have been dug in the heart of the pre-Clovis occupation at Topper.

In the block unit, the plowzone was taken off as a single level and screened. A second level, starting at the base of the plowzone continuing down to 70 cm below surface, was dug as a single level and screened through quarter inch mesh. This produced a few more of the MALA points (now called Allendale points), including a quartz specimen indicating a probable Piedmont connection. Several of these points and over 100 thermally altered bifaces and fragments were found in the 2001 block excavation located immediately south and west of this years block. MALA (or Allendale) hafted bifaces form a dense lithic zone from about 35 cm to 50 cm below surface at Topper, a remarkable archaeological horizon since it probably formed in less than 500 years (see Goodyear, *Legacy* Vol. 6, No. 2, December 2001). No other diagnostic Archaic hafted bifaces were found this year, other than the MALAs. The hillside ground surface begins to rise noticeably here perhaps making habitation less desirable. The artifacts from the second excavation level were typically debitage and cores related to processing the local chert material.

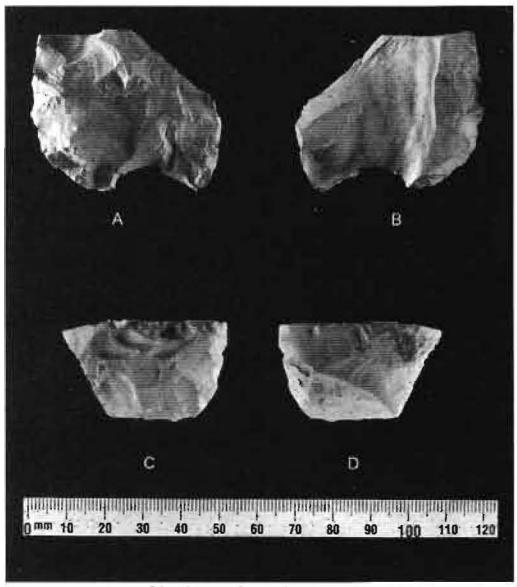

Figure 5: Top, Clovis preform base ruined by outrepasse'; Bottom, Clovis preform base with transverse flaking (SCIAA photo by Daryl P. Miller)

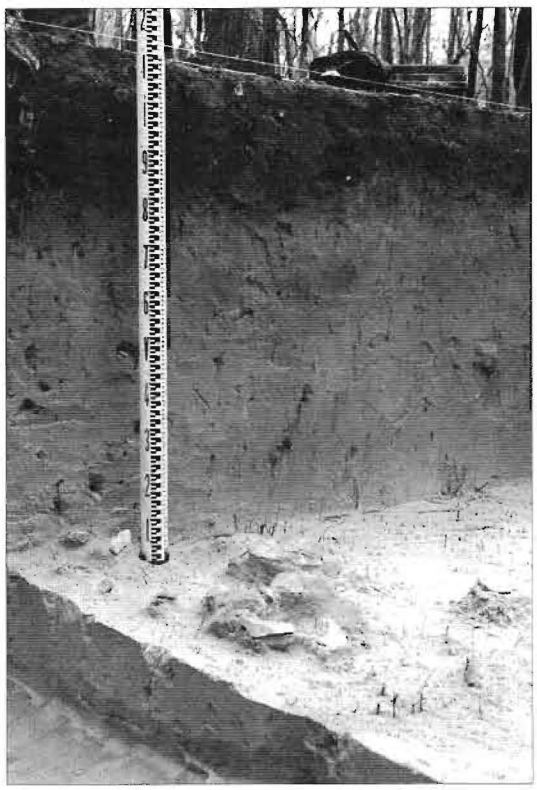
Figure 4: Clovis lithics in situ in NE quad of N284 / E136, 97.67 M, March 9, 2002 from the Topper site (SCIAA photo by A.C. Goodyear)

At 70 cm below surface, the 4 x 8 m grid was re-set for 2-meter units and the remainder of the Holocene was excavated in three 10 cm arbitrary levels to about a meter below surface. Several well-made unifacial tools were recovered in situ as well as a few undiagnostic bifaces which may be Early Archaic or Paleoindian in nature. No Early Archaic Taylor side-notched points were found in this year's block excavation, although an unusual preform or point was found with a single corner notch. From the adjacent 2000 and 2001 block excavations, a total of four Taylor side-notched points were found in the 70 to 80 cm below surface zone, and a fifth Taylor point base was found this year in the laboratory from the 2001 block, also from the 70 to 80 cm zone. These five Taylor points strongly indicate that the Early Archaic Taylor occupation exists from about 70 to 80 cm below surface in this part of the site. It should be noted that an interesting base of what appears to be a finished lanceolate projectile point was found in situ while excavating level 3 (Figure 2). It was located about 70 cm below surface, which is within the just discussed Early Archaic zone. However, it does not appear to be a preform for a Taylor point owing to its narrow blade width. The base is well thinned and resembles more of a Paleoindian type, perhaps Clovis, although the basal thinning appears to be made by hand pressure and not fluting. It is not ground on the laterals or in the concavity.

In all of the excavations of Topper thus far, no firm evidence based on diagnostic projectile points has been found to indicate an occupation

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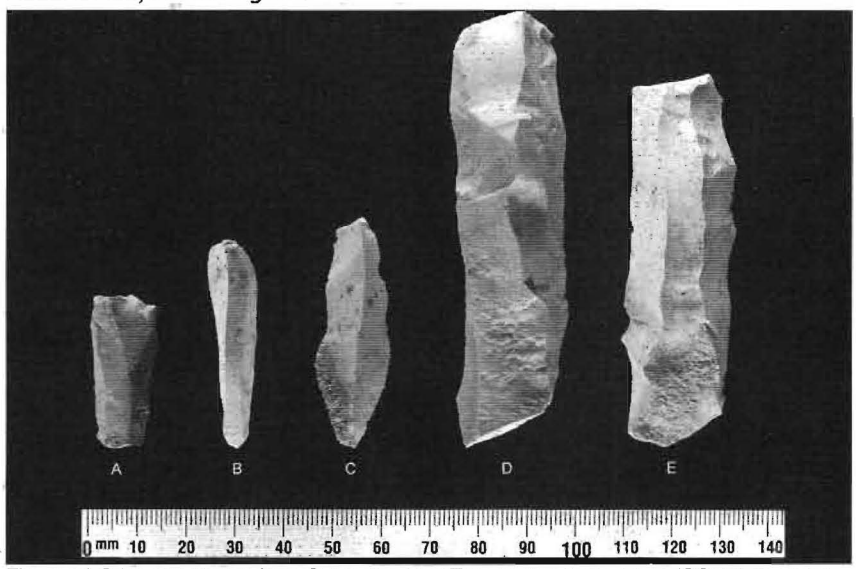

Figure 6: Prismatic blades from Clovis levels at Topper, 3 to 9 cm range (SCIAA photo by Daryl P. Miller)

between Clovis and Taylor. That is, no Redstone-like, Suwannee-Quad or Dalton points have been recovered. Based on current findings, it appears that the Early Archaic Taylor people were walking on Clovis ground surfaces or nearly so. This may explain why some of the Clovis preforms are found in the Early Archaic levels. And, at least two Taylor points from the northern end of the site have been found below 80 cm below surface.

A substantial Clovis occupation was recognized this year in two different locations, including the aforementioned Clovis point (Figure 2). In March, a week-long excavation was conducted on the northern end of the site in two areas around N268 / E134 and N284 / E134. These units were dug primarily to remove the upper meter of Holocene material in order that there might be time to take them down to the Pleistocene terrace during the May excavation. The purpose of these excavations was to test for the presence of cobble and boulder-sized pieces of chert on the northern end of the site lying in a natural state or feature-like concentrations as seen in the pre-Clovis zone of the block excavations. This would have been the "upstream" area during Pleistocene times. In 1999, two 2-meter units were dug at N268 / E132 and N282 / E132, which indicated that no large pebbles or cobbles of the pre-Clovis age chert was present. Excavations were expanded around these units in 2002 to more thoroughly document this absence. In May, because of time limitations, only six square meters were excavated down to the Pleistocene terrace, in the area of N285 / E135, which revealed no examples of chert cobbles.

During the March excavation of the four 2-meter units in the N284 / E134 area, it was obvious that Clovis-related lithic remains were present in dense concentrations (Figure 4). This was based on the presence of several *outrepasse'* flakes from transverse biface thinning and the base of one biface which had been ruined by an *outrepasse'* (Figure 5). An example of a Clovis preform with the characteristic transverse flaking that did not suffer from an *outrepasse'* is also shown in Figure 5. It came from the southern units of the March dig in the Clovis zone. Numerous blade-like flakes from early stage blade core preparation were found as well as finished prismatic blades. These run from macro prismatic blades (5-10 cm) (Figure 6) down to small bladelets 20 mm or less (Figure 7). These tiny bladelets have been observed before with Clovis at the nearby Big Pine Tree site. The large, macro prismatic blade shown in Figure 8, was found by a collector in Allendale County, and gives an idea of the potential size of blades removed from the quarries to distant use locations. A few large unifacial tools were also excavated, implements that may have served on-site as hand-held knives or scrapers (Figure 9). This Clovis manufacturing layer has remarkable integrity with the larger pieces of chert debris and tools lying flat and clustered together (Figure 10). In May, another 2-meter unit was excavated as an extension of this 4 x 4 meter unit revealing more of this same technology. In addition to more blades and broken bifaces, the base of a small fluted point was found in situ in the upper part of the Clovis zone (Figure 2). Owing to the width of the

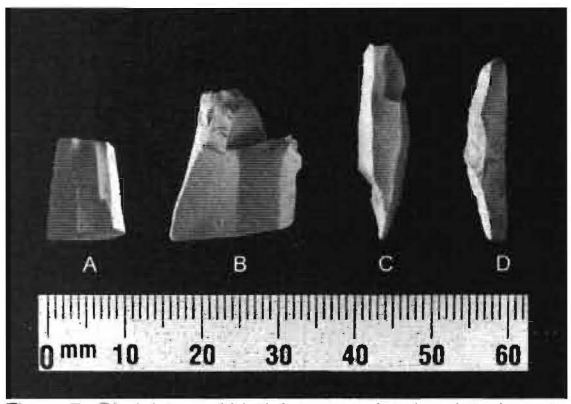

Figure 7: Bladelets and bladelet cores showing detachments from the Clovis levels at Topper (SCIAA photo by Daryl P. Miller)

scar and the hinge, it certainly represents a flute. Altogether from the Clovis point to the bottom of the layer, the Clovis horizon is about 20 cm thick.

The stratigraphic position of this material accords well with previous geologic interpretations of Clovis at Topper. Based on the 2000 geology study of the site, it was determined by OSL dating that the base of the colluvial sands were 13,500 years old (KA). Clovis is known to date from 13,000 to 13,500 calendar years. In the accompanying photo (Figure 11), the concentration of Clovis lithics can be seen lying in the base of the pedogenically stained Holocene colluvium, overlying the top of the white Pleistocene alluvial sands. Because of cooler weather in March and greater soil moisture due to winter rains, the color differences between the Holocene colluvium and the Pleistocene alluvium are rather dramatic. The value of these excavations, among other things, is that they place definitive Clovis biface and blade making technology in the base of the colluvium as would be expected for its age.

The other area where significant Clovis lithics were found was in Backhoe Trench 15 (Figure 12). The geology team visited the site again this year, including Dr. Michael Waters, Dr. Tom Stafford, and Dr. John Foss. They needed another backhoe trench to help clarify the stratigraphic relationship between what they had originally thought was an older weathered terrace remnant and the Pleistocene terrace. Trench 15 was dug on the northern end of the site near the N284 excavation. It began at E134 and ran east for 50 meters up the hillside up to 103 m elevation. Such a lengthy exposure clearly revealed that the so-called weathered terrace was in fact a paleosol which separated the Holocene colluvial mantle from the Pleistocene alluvial sediments. The source of the fine translocated sediments for this old soil was an ancient red clay terrace remnant found upslope. Dr. Foss, project soil morphologist, indicated that from 2,000 to 4,000 years of weathering would be needed for this much pedogenic development to occur.

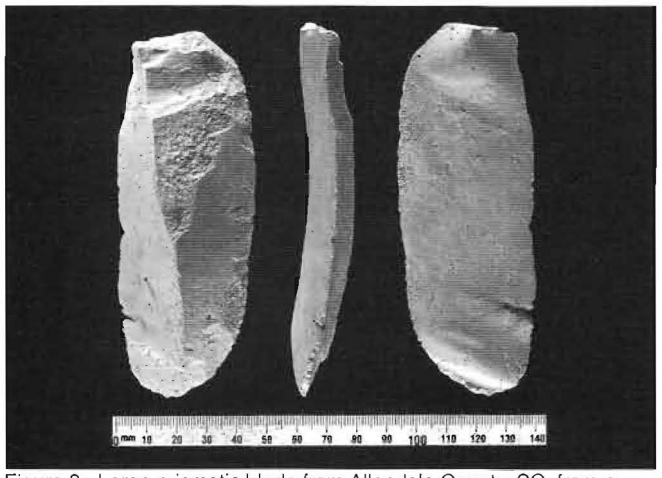

Figure 8: Large prismatic blade from Allendale County, SC, from a private collection (SCIAA photo by Daryl P. Miller)

As can be seen in the profile (Figure 12), weathered chert artifacts lie as a bed on top of and within the upper portion of the old red paleosol. Based on numerous examples of prismatic blade core preparation flakes and *outrepasse'* flakes, this zone of lithics is Clovis. It is also situated in the bottom of the Holocene colluvium. Because of the early stage nature of these flakes and cores, they appear to be close to the chert source where Clovis cores were roughed out. Pedogenically stained chert cobbles are present upslope here and are likely one of the chert sources of Clovis peoples. Thus, both in Trench 15 and in the nearby excavations of the N284 area, significant Clovis occupations are present, the former more related to chert processing and the latter with biface

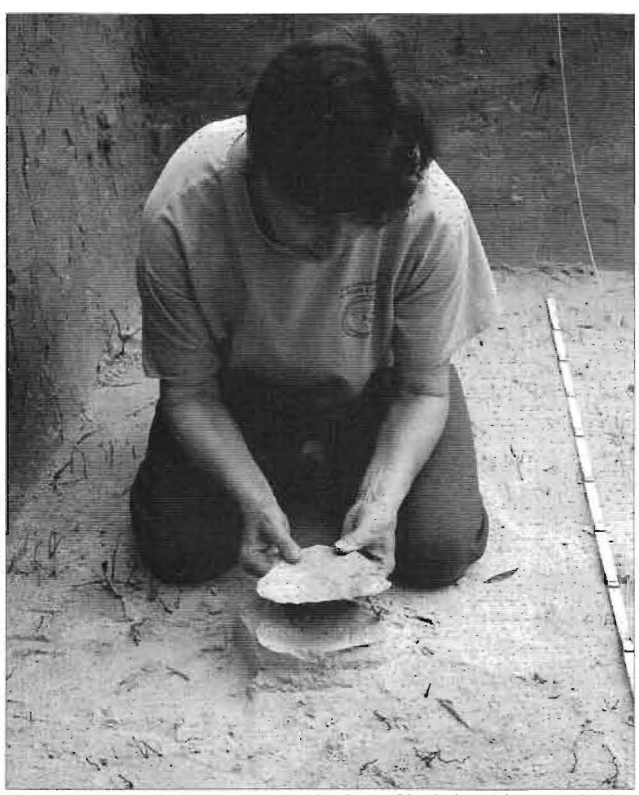

Figure 9: Large knife-scraper in situ from Clovis level from N284 / E136, March 9, 2002 (see Figure 4) (SCIAA photo by Albert C. Goodyear)

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and blade manufacture and tool use. Excavations are planned for the 2003 season to systematically excavate these Clovis lithic remains.

The stratigraphy present in Trench 15 (Figure 12) is also further evidence of the antiquity of the pre-Clovis occupation seen elsewhere at Topper. The lower white sands in the profile are Pleistocene Savannah River alluvium, which is the same stratigraphic zone of the pre-Clovis lithic features excavated in the block units to the south. The Pleistocene terrace lies underneath these sands in both places. Going downslope away from the red clay source, the paleosol pinches out and disappears so that the Holocene sands overly the Pleistocene alluvial sands, the normal stratigraphic situation over most of Topper. This intervening red paleosol would add from 2,000 to 4,000 years to the 15,200 KA OSL date which was obtained previously (see *Legacy* Vol. 5, No. 2, December 2000) at the contact of the colluvium and the top of the Pleistocene alluvium. Although not directly dated, this implies that the Pleistocene sediments could be from 18,000 to 20,000 years old and the artifacts that lie within them. Some small burnt flakes were recovered from the Pleistocene sands in Trench 15. It is hoped that if a large enough piece of burned chert can be found, a TL date might be obtained directly on the alluvium. In the upcoming 2003 field season, we plan to excavate the Clovis material seen in Trench 15 and excavate on through the red paleosol into the Pleistocene sands. If no artifacts are found in the red soil, it would suggest that perhaps there was a long hiatus in the occupational history of Topper from pre-Clovis to Clovis.

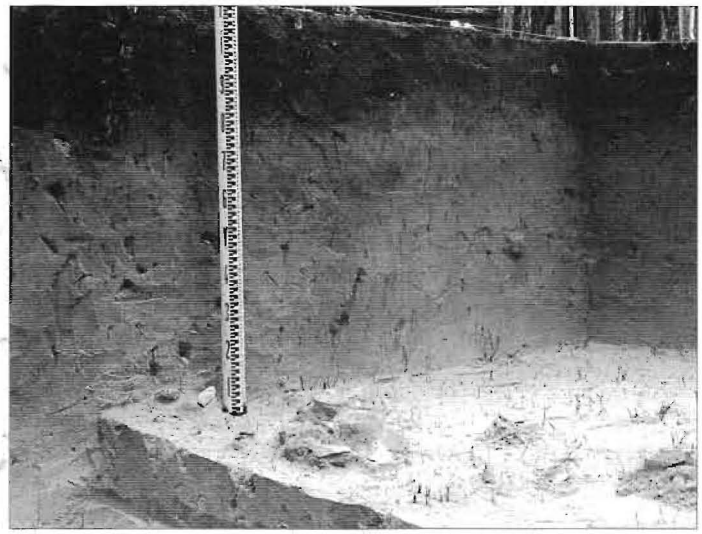

Figure 11: Profile showing position of Clovis lithics in bottom of pedogenically stained Holocene sediments overlying whiter Pleistocene alluvial sands. Profile on E139 line looking SE (SCIAA photo by Albert C. Goodyear)

Excavations in the Pleistocene sands in the block excavation produced the usual types of lithic materials previously encountered in the 2000 and 2001 blocks. That is, smashed pieces of cortical chert, flakes, and the chert clusters. Any worked pieces were mapped in situ as well as cortical pieces 5 cm or larger. By excavating this way, several examples of the chert clusters were recognized (Figures 13 and 14). As previously seen in the adjacent 2000 and 2001 excavations, these clusters lie on common surfaces but at different levels indicating the clusters were created at different times during the formation of the Pleistocene alluvium. There is no macroscopic evidence that these cortical chert pieces were burned as related to hearths; they continue to look like chipping areas where chert was smashed and otherwise reduced. The sporadic shallow chute channels with pea gravel sized clasts were observed as usual in the alluvium. However, the chert clusters do not evince any linearity indicating that they were neither fluvially formed or deformed. Their sheer size alone eliminates the possibility of them being either smashed or arranged by flood water.

Additional sediment samples for Optically Stimulated Luminescence (OSL) dating were taken this year

Figure 10: Close up view of in situ Clovis lithics in NE quad of N284 / E136 showing archaeological integrity (SCIAA photo by Albert C. Goodyear)

one meter west (E145) of where the original dates were obtained in 2001. These samples will be tested in an attempt to replicate the previous dates. OSL samples were also taken from the pure Clovis lithic layer in N286 / E138, which will allow dates to be obtained in association with Clovis artifacts.

The rest of the summer and early fall were spent working with Steve Folks and Jim Welch of SC Educational Television producing their documentary "They Were Here: Ice Age Humans in South Carolina." Prior to the weekly filming of the Topper site excavations of 2002, ETV had gathered footage from the work of lithic consultants Steve Watts and Scott Jones as they replicated pre-Clovis core and flake tools. Steve was good enough to stand-in as our own Pleistocene age "Topper Man" in the video, complete with his primitive regalia. In the late fall, they filmed Dr. Doug Williams of the USC geology department and his colleagues from Coastal Carolina University as they obtained vibracores from the Topper site. In January, SCETV covered the Allendale-Topper conference obtaining interviews from key archaeologists. All of this video plus what they got from the excavation this year was melded together in time for the premier statewide broadcast of October 29, 2002. The 27-minute video was shown as part of a one-hour live show before a studio audience with call-in questions from the public. Jim Welch was the host while questions from the audience and phone lines were directed to myself and Dr. Dennis Stanford of the Smithsonian Institution (Figure 15). Dr. Stanford was gracious enough to spend three days at the SCIAA examining Clovis lithics from the Topper site as well as the nearby Big Pine Tree site. For the television broadcast, Dennis brought a global perspective to the whole matter of the peopling of the Americas, as he provided various casts of Pleistocene age artifacts from North America and the Old World (Figure 16). All in all, it was a fun evening with lots of audience participation and many follow-up inquiries on how to be a part of the Allendale Paleoindian Expedition. SCETV received a grant from Clariant Corporation to produce this documentary. Clariant is the owner of the Topper site and other important chert quarry-related sites we have investigated in Allendale County over the years. The evening of the broadcast, Clariant President Ken Golder received a plaque from SCIAA in appreciation for all their noteworthy efforts in archaeological research and preservation on their property. Mr. Golder promptly passed the award to Mr. Bill Hartford, manager of the Clariant Martin plant, our hosts each year on the Allendale excavations.

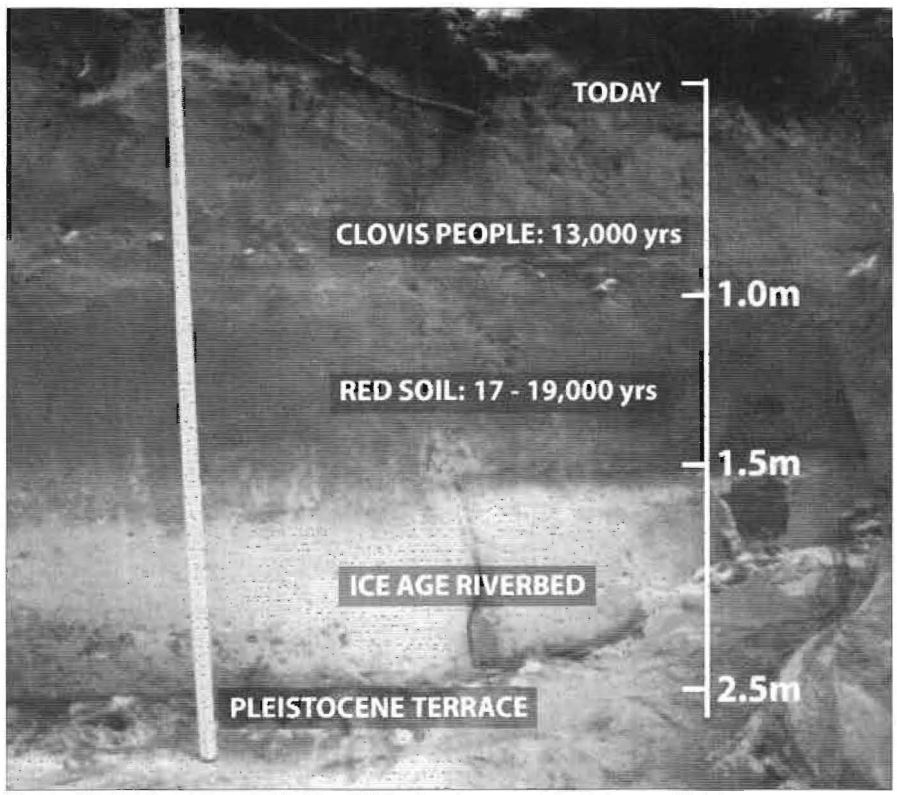

Figure 12: Profile of Trench 15, May 2002, showing complete Holocene-Pleistocene stratigraphy of Topper site. Buried layer of Clovis age lithics seen resting on top and within upper portion of Pleistocene B horizon. (SCIAA photo by Daryl P. Miller)

As usual we had a very dedicated and hard-working supervisory staff to help make the excavation a scientific success. Returning this year as the Senior Site Supervisor after a six-year absence was Kara Bridgman. Kara worked at Big Pine Tree in 1995 and 1996, then went to Ireland to obtain her masters degree. She is currently a doctoral student at the University of Florida with research interests in Early Archaic peoples of the Southeast. She will join us again in 2003. Kenn (Dragon) Steffy performed his usual logistical-record keeping magic making sure

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equipment, the field lab, and of course the bags and proveniences were all in line. Other supervisors include Bob Cole and Bill Lyles, both, seven-year veterans of the Allendale campaigns, and newcomers John Kirby and Tony Pickering. Chris Gillam, archaeologist with the Savannah River Archaeological Research Program of SCIAA, spent two weeks helping supervise the early occupations of Topper. John White also came for two weeks and assisted in excavations. I am happy to say this entire supervisory staff will return as the starting lineup for the upcoming 2003 season at Topper. Also, supervising the artifact lab were Bill Lyles, Nancy Olsen, and Bill Larson aided by wife Marian. They kept the washing going making sure all the artifact bags were kept straight. It goes without saying that without these committed and competent folks, we could never manage such a large excavation. Daryl Miller provided his usual great photography of people and scientific shots. During the year at SCIAA, Kenn Steffy oversaw our continuing lab work ably assisted by John Kirby, John White, Darrell Barnes, Bill Larson, and Bill Lyles. They have done yeoman service sorting through great quantities of lithics recovered from Topper.

Figure 13: Clusters of smashed cortical chert lying in piles on common levels in the pre-Clovis Pleistocene alluvium in the 5 x 9 m excavation block of 2002. (SCIAA photo by Daryl P. Miller)

The eighth annual Paleocarnivore Ball was held in-house this year, as we barbecued turkey and pork roasts at the picnic shelter. T shirts which said "Rocket Scientist" were awarded to our geoscientists in honor of their valuable work with the Topper site stratigraphy and dating. This social event was memorialized by being included in the ETV documentary. David Hodges of Columbia, SC led two tour groups down to the Topper site as he continues to introduce our work to interested private supporters. Betty Stringfellow and her friends came up from Johns Island with their usual superb picnic they always share with us. The Allendale Historical Society paid us a visit one evening and gave us a wine and cheese reception. Scott Jones came down the last Friday night and gave a splendid primitive technology demonstration that ended up as part of the ETV video. Jim Welch provided guitar music and vocals after dinner the day we found the Clovis point. That night we sang everything but Kum By Ya.

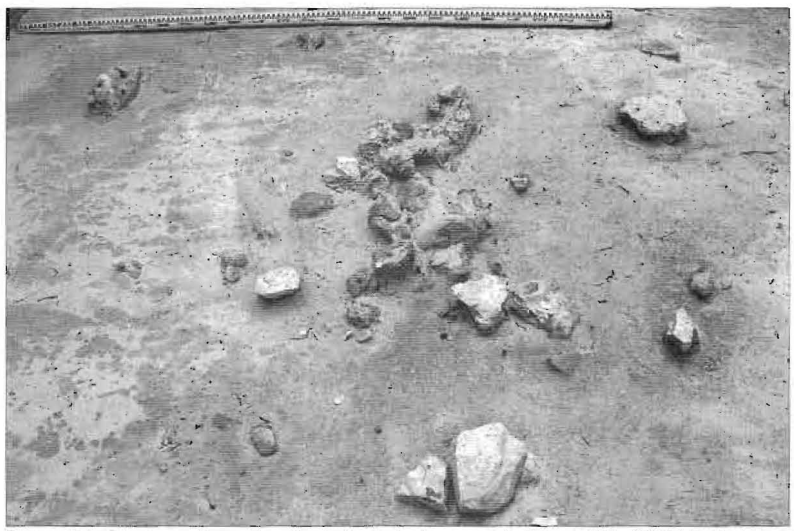


Figure 14: Close up view of cortical chert cluster seen in Figure 13. (SCIAA photo by Daryl P. Miller)

Other volunteers also helped out beyond the usual way. Ann Judd arranged for airline tickets for some of the geoscientists, Bill Kaneft of Colonial Plastics in Sumter, SC donated the ziploc bags and construction plastic so necessary to our work. Marty Howes arranged for backhoe services at a test site near Sylvania, Georgia, Darrell Barnes of Yesterday's Restaurant donated Boston Butts for the BBQ, and Tom Pertierra donated computers, "Rocket Scientist" T shirts, and set up on-line registration services for the program and of course he is the host of our pre-Clovis list serve.

Our hosts at Clariant once again

allowed us to move in for nearly six weeks and as usual made us feel entirely welcome. Bill Hartford, Plant Site Manager, has become our corporate cheerleader, along with Connie Knight in Charlotte. Susan Yates, Human Resources Manager, Tom Pinckney, Head of Security, and John Thompson, backhoe operator extraordinaire, were always ready to help. Thanks also to Ms. Iola Brooker and sister Perry who brought down southern cooked meals each night from their restaurant in Barnwell.

The Allendale Paleoindian Expedition operates by the financial gifts and donated services of many people, particularly the volunteers who sign up each year for a week or more. These people who came on the dig for 2002 are listed below:

First Week

Bill Covington, Southern Pines, NC
Starr Davis, Charlotte, NC
Jean Guilleux, Hilton Head Island, SC
Wayne James, Atlanta, GA
Dean Kokenes, Charlotte, NC
Grace & Thor Larsen, Stuart, FL
Charles & Nancy Olsen, Newnan, GA
Janis Rodriguez, Cumming, GA
Carol Tomlinson, Charlotte, NC
Henry Wilkinson, Charlotte, NC
Neill Wilkinson, Charlotte, NC

Second Week

Elizabeth Allan, Atlanta, GA
Darrell Barnes, Blythewood, SC
Martha Christy, Winter Springs, FL
Robert Dehoney, Isle of Palms, SC
Martha Tate Doughtery, Charleston, SC
Frank Doughtery, Charleston, SC
Jennifer Gallo, Goldenrod, FL
Vicky Hollingsworth, Newnan, GA
Terry Hynes, Atlanta, GA
Steve Miller, Columbia, SC
Tony Pickering, Darlington, IN
Betty Anne Tate, Columbia,
Julia Wester, Snellville, GA
Fitz Williams, Greenville, SC
John White, Winnsboro, SC

Third Week

Dale Brantley, Aiken, SC
Stan Cash, Jackson, SC
Mark Eastland, Lawrenceville, GA
Bennett Evers, Chapin, SC
Beth Evers, Chapin, SC
Emily Gibson, Barnwell, SC
Agnes & Curtis Holladay, Fairview, NC
Robert Phillips, Jacksonville, FL
Tony Pickering, Darlington, IN

Fourth Week

Adele Barbato, Tolland, CT
Darrell Barnes, Blythewood, SC
Cynthia and Hal Curry, Charlotte, NC
Desca Dubois, Lake Park, FL
Nan Faile, Leesville, SC
Kathleen Hayes, Columbia, SC
Ann Judd, Charlotte, NC
Judy Kendall, Mt. Pleasant, NC
Laurence Lillig, Indianapolis, IN
Tom Pertierra, Greenville, FL
Greg Pfanstiel, Indianapolis, IN
Tony Pickering, Darlington, IN
Joan & Ernie Plummer, Gardiner, ME
Pat Morris, Orlando, FL

Fifth Week

Bill Covington, Southern Pines, NC
Fiona Funderburg, Missouri City, TX
April & Don Gordon, Rock Hill, SC
Tanya Graham, Simpsonville, SC
Marty Howes, Sylvania, GA
Jay Hughes, Dorchester, SC
Terry Hynes, Atlanta, GA
Sheila Jackson, Greer, SC
Ann Judd, Charlotte, NC
William & Marian Larson, Santee, SC
Richard McDonnell, Brooksville, FL
Lawrence Meade, Charlotte, NC
Tom Pertierra, Greenville, FL
Tony Pickering, Darlington, IN
Gary Scrivano, Seymour, CT
Ted Tsolovos, Chapin, SC
Jim Way, Dorchester, SC
Damian Werner, Charlotte, NC
Connie White, Atlanta, GA
Alaina Williams, Charleston, SC

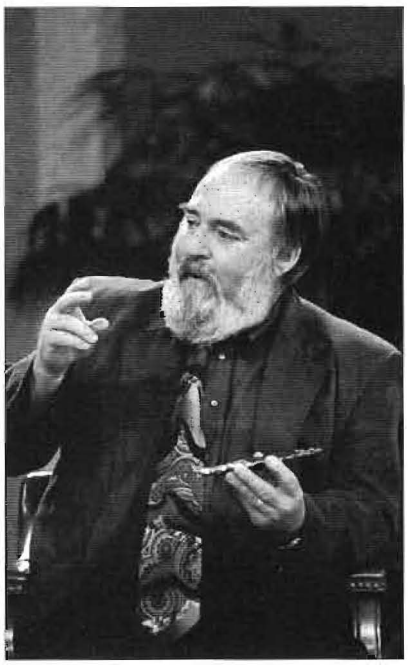


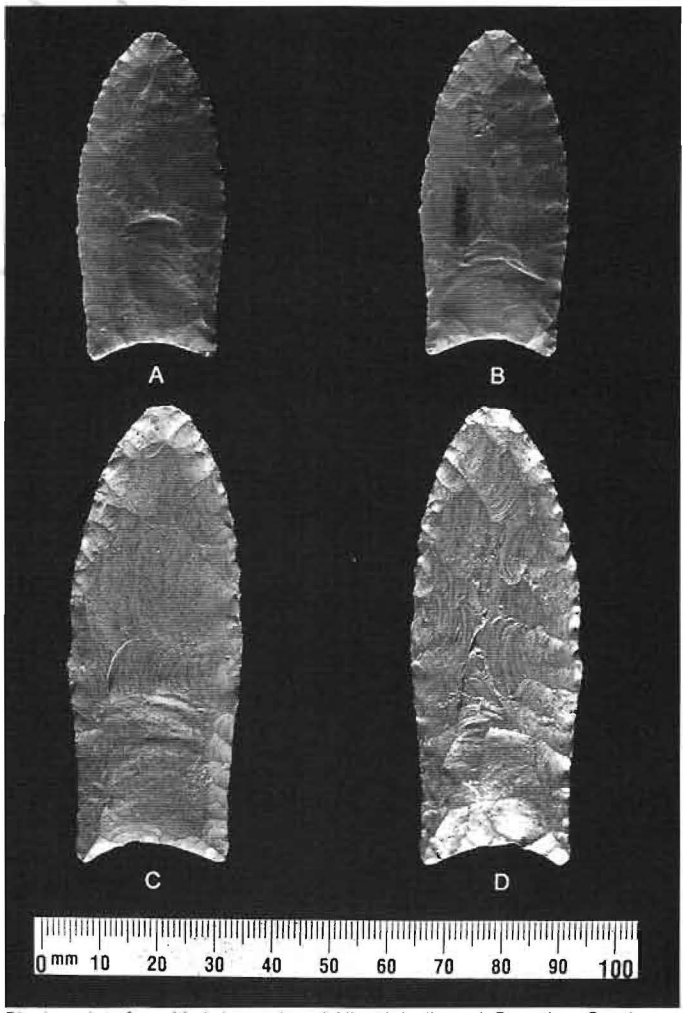
Figure 16: Dr. Dennis Stanford of the Smithsonian Institution providing commentary during SCETV's live broadcast on artifacts and adaptations seen in the Old World during the Pleistocene (SCIAA photo by Daryl P. Miller)

Figure 15: Live broadcast of SCETV's October 29th premier showing of "They Were Here: Ice Age Humans in South Carolina" with host Jim Welch, Al Goodyear, and Dennis Stanford (SCIAA photo by Daryl P. Miller)

THE SOUTH CAROLINA PALEOINDIAN POINT RECORDING SURVEY CONTINUES

By Tommy Charles

Al Goodyear and I are continuing to record new finds of Paleoindian lanceolate points. Additional examples are being reported sporadically and included in the Statewide Inventory that Tommy Charles has maintained. The count now is up to 340. Several new ones have been reported plus some of the older finds are being photographed or re-photographed by Daryl P. Miller to enhance the photo recordation. If people think they have found a Paleoindian point or know of any found, please contact Tommy Charles or Al Goodyear at the SC Institute of Archaeology and Anthropology (803-777-8170) or email them at charles@sc.edu or goodyear@sc.edu. Examples of classic Clovis points are shown here.



Clovis points from York (upper) and Allendale (lower) Counties, South Carolina. (SCIAA photo by Daryl P. Miller)

THE PATTERSON SITE ON THE PACOLET RIVER, SPARTANBURG COUNTY, SOUTH CAROLINA

By Tommy Charles

The summer and fall 2002 has been quiet, but very busy. The proposed testing of the Patterson site (38SP156), a Late Archaic site located on the Pacolet River in Spartanburg County, was done periodically during the month of August. This project is being conducted jointly with Dr. Terry A. Ferguson of Wofford College. Ground penetrating radar was first used to evaluate the subsurface ground structure, then a series of auger tests were sunk to depths of 3.5 meters over a portion of the site, and two 1 X 2-meter test pits were excavated. These tests were preliminary and limited but they revealed deep alluvial sand deposits adjacent to older upland terraces and a yet unidentified scatter of prehistoric cultural debris at approximately one meter below the ground surface in the sands. Plans are underway to analyze the soil samples collected from the testing and to expand testing to other parts of the site. Eventually, we will excavate areas in the alluvial sands to examine the cultural materials discovered there.

PREHISTORIC STONE TOOLS OF SOUTH CAROLINA

By Tommy Charles

Work on "The Prehistoric Stone Tools of South Carolina," a report in progress, is near completion. It has evolved into a more massive project than I had originally planned, but the extra work and attention is needed. Working with the graphics is almost competed and it has consumed a considerable amount of time. Photographs being used are ones taken by me some 15-20 years ago while conducting the Collections Survey. They were taken in attics, garages, outdoors, or wherever circumstances dictated in order to create records. As such, many photographs are in less than state-of-the-art- condition. Each photograph used is refurbished using Apple Computer and Photoshop software. We have decided to create these manuals for both the SCIAA Library and Information Management Division. They will be completed by early spring.

UPDATE OF PETROGLYPH SURVEY

By Tommy Charles

The petroglyph survey continues as time permits. This past year a number of sites were revisited to obtain more complete data before filling out site forms for each. To date 47 sites have been recorded and there are five others that await further investigation before assigning site numbers. The two most recent discoveries are in Laurens and Spartanburg Counties.

knowledge that you will continue to work in South Carolina as a colleague and friend.

Wayne Neighbors worked as a volunteer with the Institute for many years. He consulted with three directors, worked on innumerable field projects, helped to build the Conservation Facility, and was a generous donor and friend. A frequent guest in everyone's office, he was possessed of a singular sense of humor and enjoyed being a raconteur. Hours could flow like water when Wayne was in top form. It therefore came as a shock and a sorrow when Wayne passed away late in May. It was totally unexpected. The service held for Wayne at the Florence National Cemetery was a celebration of a unique life of accomplishment. Being named as honorary pallbearers honored us all. Wayne was a rare mix of enthusiasm and talent. We will not see his like again, and we are diminished by his loss. Our heartfelt condolences are with his family. His memory will always live in the hearts of his friends.

On a happier note, Clariant President and Chief Executive Officer Ken Golder was on hand for the very successful premier showing of the South Carolina Educational Television production of, "They Were Here: Ice Age Humans in South Carolina" that was held on the evening of October 29, 2002. Clariant Corporation awarded a grant to SCETV to produce the documentary on the discovery of the Topper site located on Clariant property in Allendale County in 2002. This was simply the latest in Clariant's generous support of the Institute's Allendale Paleoindian Expedition over the last 20 years. The film was well received throughout the state and had a live call-in segment to answer questions from the viewing public. A high point of the evening was the presentation of a plaque of appreciation for Clariant's outstanding preservation and support of archaeology on their properties given to Mr. Golder by Dr. Albert Goodyear, Project Director, and Dr. Rippeteau. The Institute greatly appreciates Clariant's corporate support from both the state and national level and looks forward to many more years of mutually beneficial activities.

Chris Gillam, Al Goodyear, Tom Pertierra, Dennis Stanford, and Scott Jones studying examples of South Carolina paleoindian artifacts in preparation for the SCETV broadcast on October 29, 2003. (SCIAA photo by Daryl P. Miller)

Legacy is an important publication for the Institute. In it's pages, we provide the ongoing story of our research, activities, and accomplishments. Invitations to take part in fieldwork or to go on professionally guided tours of archaeological discovery are a common feature as well. Over 5,000 people and institutions receive it. As you might expect, it isn't inexpensive to produce, and we are facing a continuing shrinking budget. We are asking all of our readers to consider the value of the *Legacy* and to make a tax-deductible donation to support its publication. If you would prefer to receive the *Legacy* as a CD or as an emailed Adobe Acrobat file, please let us know. A business envelope is inserted for your convenience. We hope that you enjoy reading this issue of *Legacy* and look forward to hearing from you!

SCIAA presents Clariant Corporation a plaque in appreciation for their support in archaeological research on their property. Left: Maurice "Moss" Bresnahan, President and CEO of SCETV, Ken Golder, President and CEO of Clariant Corporation, and Albert Goodyear and Bruce Rippeteau for SCIAA. (SCIAA photo by Daryl P. Miller)

Excavations in Bridgetown, Barbados: A Link in the Barbados-Carolina Connection

By Michael J. Stoner, L. Brett Brinegar, and Karl Watson

In 1628, Charles Wolverstone landed with 64 settlers at a low-lying "valley [where an] ingress of the tide had formed a large swamp" on the southwest corner of Barbados. While the island already had a settlement to the north of Wolverstone's landing at Jamestown, the arrival of these settlers was the beginning of what would become the largest and busiest 17th century metropolitan area in all of British America - Bridgetown. For nearly 375 years, Bridgetown has indeed grown into a thoroughly modern capital city, rich in historical and cultural significance. Although the pace of current urbanization begins to quicken, significant parts of Bridgetown have weathered the last three centuries with remarkable resolve, but as an archaeological resource, the city remains largely untapped.

Figure 2.: Michael Stoner with near complete 17th century bottle shortly after excavation. (Photo by L. Brett Brinegar)

In the summer of 2002, the University of the West Indies, Cave Hill, Barbados, initiated archaeological investigations at the Mason Hall Street site in the heart of Bridgetown. (See Figure 1) The site, located on the corner of St. Mary's Row, known to be a major thoroughfare during the 17th century, and Mason Hall Street, formerly an unnamed alley, is situated in what was in a large tenantry. This area of Bridgetown is currently undergoing a phase of rapid development and presented the University with an opportunity to conduct archaeological excavations in the heart of Bridgetown.

Figure 1: UWI Graduate Student Martina Alleyne stands waist-deep in two of the contiguous test units. (Photo by L. Brett Brinegar)

The Project undertook a sampling method to locate the areas of artifact density. This, in turn, directed excavations to a locus in which, in four contiguous test units, a 17th century feature was revealed. This feature contained a wine bottle, a crystal wine glass (See Figures 2 and 3), a white ball-clay tobacco pipe bowl, and North Devon Sgraffito Slipwares. In finding these domestic artifacts, the feature could then be identified as a refuse pit of approxi-

Figure 3: 17th century wine glass stem excavated from the feature at Mason Hall Street. (Photo by L. Brett Brinegar)

mately the second half of the 17th-century. These artifacts, however, were not the only artifacts recovered in the excavations.

The most auspicious historic ceramic type recovered in the 17th-century feature was Barbadian Redware. (See Figure 4) Around 1650, sugar planters in Barbados began employing English potters to produce ceramic sugar moulds and molasses-drip jars to replace the dwindling supply of wooden sugar pots for the manufacture of sugar. Dubbed Sugar wares, the demand for these ceramics increased as sugar manufacturing became more lucrative. Planters, therefore, found it necessary to indenture servant potters to maintain an ample stock of these vital wares. In time, this highly skilled craft was passed on to slaves. Enslaved potters in Barbados not only produced Sugar wares, they also made domestic wares for the plantation, and presumably for themselves. At Mason Hall, however, Barbadian redwares—mainly domestic wares—were not only being used in urban Bridgetown, but also in conjunction with imported European wares.

The Mason Hall Project was not, of course, the first archaeological investigation to find Barbadian Redwares from the 17th-century. Indeed, Barbadian Redwares were discovered at the site of 1670 Charles Towne, the first permanent English settlement in South Carolina. Charleston and Bridgetown have been the center of a number of historical comparisons and now, can be the beginning of archaeological comparisons. With the excavations of the Mason Hall Project, Barbadian Redwares are a vital link in the Barbados-Carolina connection.

Figure 4: Fragments of Barbadian redware from the Mason Hall Street Project. (Photo by L. Brett Brinegar)

Office of the State Archaeologist

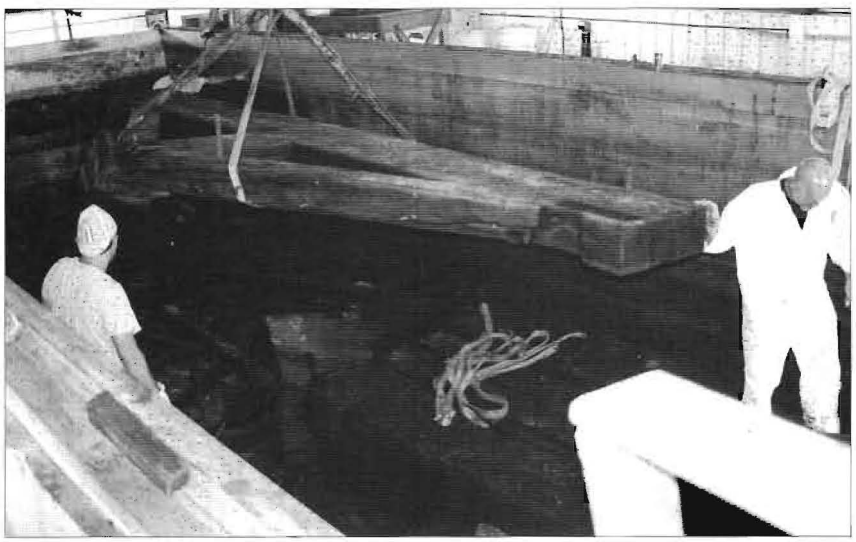
Completion of Gronauer Lock

By Jonathan M. Leader

The Wabash and Erie Canal Lock #2 is a remnant of the Wabash and Erie Canal system. At one time, it was the longest canal system in the United States. Better known by the name of its gatekeeper, Mr. Gronauer, the Gronauer Lock is an historic artifact of local, state, and national significance. Found as part of a highway widening and improvement program, the lock's survival is nothing short of miraculous. It provides a dynamic link between the New Haven, Indiana area's riverine roots and a bygone technology vital to the growth of a nation. Successfully conserved, it will now be a source of educational enhancement and tourist revenue through the exhibit being constructed at the Indiana State Museum.

Built in the 1830's, the lock is a large complex, composite artifact. Approximately 90% of the original structure was still intact when it was found, with only the lock doors, attendant mechanisms, and portions of the upper lock walls missing. The surviving structure's timbers, planks, and sills remained in place and were composed primarily of red and white oak, and poplar. Iron had also survived very well in situ in the form of forged spikes, nails, and fittings. The lock underwent a partial rebuilding during the mid-1800's further complicating the conservation efforts by ensuring a lack of uniform aging of components beyond the normal wear and tear of use or deposition.

The initial excavation of the lock was completed by a team under contract to the Indiana Department of Transportation from Ball State University located in Muncie, Indiana. The recordation and numbering of the lock's structural elements for disassembly and eventual reassembly was accomplished under the supervision of the SC Institute of Archaeology and Anthropology. As was usual, this portion was a joint venture of the Underwater Archaeology Division and the Office of the State Archaeologist.



The Crane Company hoists the conserved sill of the Gronauer Lock from the treatment tank. (SCIAA photo by Jonathan Leader)

The successful treatment of waterlogged wooden artifacts rests on a basic understanding of the nature of degraded wood and contemporary conservation techniques. Most people's understanding of wood and its properties are by direct observation of green or seasoned woods. Unfortunately, this experience does not prepare them for the realities of degraded woods from an archaeological context. Green wood is characterized by its recent removal from the living plant, its relative flexibility and density, its quantities of sap, and by its structural instability. Seasoned wood is produced by carefully drying green wood under controlled circumstances. This usually results in a relative loss of flexibility, density and volatile sap, and in a gain of structural stability. As an end product, structural stability is desirable in both modern and antique woods and is a goal of conservation. It is common for non-conservators to think of wet archaeological wood as being synonymous with green wood. If this were correct, the logical treatment would be to dry the wood under controlled circumstances and return it to its prior seasoned state. Unfortunately, this would be disastrous for the majority of waterlogged archaeological woods.

At the chemical level, all woods are composed of lignin and cellulose. Lignin is an amorphous polymer that is based on phenol. Its function is to support and preserve the cellulose

component of the wood. Cellulose is a polysaccharide, or carbohydrate. It represents almost 75% of the wood and tends to form in long chains called fibrils. Fibrils group together and produce the cell walls and other structures. Both lignin and cellulose contain hydroxyl groups that allow water to bond to their surfaces. Fluids in the form of intracapillary water, incidentally absorbed water, and sap are also present. Wood sap is primarily composed of water, sugars, salts, and other metabolic materials. Tanins, resins, silica, and tyloses are waste and preservative chemicals commonly found in redundant cells and in the dead heartwood.

The conserved sill going out the door and back to the Indiana State Museum. (SCIAA photo by Jonathan Leader)

At the microscopic level, wood can be seen as being composed of interconnecting capillaries. The function of these capillaries is to move sap containing nutrients and waste to and from the cells. It is not surprising that the majority of wood cell structures are oriented from the root to the crown of the tree. Hardwoods, such as oak, are more complex in their cell structure than softwoods, such as pine. Similar structures exist in both woods in the form of rays and tracheids in softwoods, and rays, fiber tracheids, and vessels in hardwoods. In both soft and hardwoods, valve-like intervascullar pits connect the cells. Each pit has a valve membrane called a torus. The membrane opens and closes controlling the passage of fluids.

In addition to the chemicals and cellular structures already mentioned, green and seasoned wood both contain quantities of air. The air present in green wood means that it is not filled to maximum capacity by water. This in turn means that surface tension stresses are localized and more easily defused through the wall structures in the individual cell or smaller groups of cells. This is an important point, as the greatest damage to drying waterlogged archaeological woods that do not contain air occurs from an increase in the effect of surface tension on degraded wall structures. The green wood's excess water escapes through the small intervascullar pits, which dramatically increases the pressure exerted on the cell walls, but not to the point that the sound wood can not achieve equilibrium and eventual seasoning. Some water, approximately 25% of the seasoned weight, remains chemically bound to the cellulose in seasoned woods.

Depending on the archaeological environment, large quantities of the wood may be lost. In waterlogged woods, the extra water from the outside environment mechanically stresses the wood through swelling and bulking the fibers. It also effects the wood's chemical composition. The interaction of water and cellulose over time results in a process called acid hydrolysis. Acid hydrolysis causes the breakdown of the cellulose into its component simple sugars. This results in damaged cells and the loss of necessary support structures. Needless to say, adequate support is essential for the waterlogged wood to survive the effects of evaporation. During evaporation, the sequence of wood cells that become water free is somewhat random. This shift from cell to cell in differing locations of the wood focuses the tension stresses, and in conjunction with the lack of air in the waterlogged wood, maximizes the effects of surface tension on the degraded cell walls. As in sound woods, intervascullar pits enhance the situation by channeling the evaporating water through tiny apertures. The resulting damage to a sufficiently degraded wood is usually rapid and devastating. In addition, once the cell walls collapse, and the inner surfaces of the cell come in contact with each other, they cannot be separated.

Bacteria and fungi also play a significant role in the degradation of archaeological waterlogged woods. Under normal conditions cellulose, hemicellulose, and cell sap are a feast for these organisms. Archaeological waterlogged woods, in oxygenated surroundings, provide these entities even easier access to these nutrients.

GRONAUER LOCK, See Page 36

GRONAUER LOCK, From Page 35

In both cases, the result is a loss of support structures. As a general statement, hardwoods tend to be more resistant to this form of attack then softwoods, and heartwood is more resistant than the sapwood.

The most common conservation technique for dealing with waterlogged archaeological wood is the replacement of the water with some form of bulking agent. Success or failure for this technique rests on the wood's permeability and degree of degradation. As a general statement, the more degraded the wood, the more likely it is to be permeable. Unfortunately, archaeological waterlogged woods can be extremely variable when it comes to permeability, even within a single artifact. It is not uncommon for the tori valves in the intervascular pits to survive in a closed position. This can occur even in badly degraded wood, thus rendering the wood difficult to permeate. In addition, the survival of large quantities of tanins, resins, and tyloses can also drastically affect the ability of the wood to take up fluids. Mitigation of these factors requires a thorough knowledge of the wood being treated. Determining the wood's moisture content and specific gravity gives the conservator an idea of the quantity of undamaged wood that remains. Microscopic inspection of the wood provides information concerning the actions of bacteria, fungi, and the presence of closed tori and tyloses. Once these factors are known, conservation can proceed.

The most commonly used agent for conserving archaeological waterlogged wood is polyethylene glycol.(PEG). Polyethylene glycol is a polymerized form of ethylene oxide and has been used to preserve archaeological wood for almost 50 years. It is considered to be non-toxic and biodegradable. PEG solutions tend to become acidic with PH ranges of 4.9 to 7.2, and will attack most metals with the exception of stainless steel. This can make the PEG treatment of composite wood and metal artifacts difficult, as the metal component can be damaged or entirely destroyed. Buffering agents can be added to PEG to mitigate its effect on metal.

Conserved Gronauer Lock coss members, each representing a single oak tree, loaded on the National Van Lines truck. (SCIAA photo by Jonathan Leader)

Large pieces of waterlogged archaeological wood are often treated with PEG in a variety of ways. Spraying, brushing, and tank immersion are the most common techniques. Past decisions to spray or brush large pieces of waterlogged archaeological woods, rather than to immerse them, have been tied to expedience rather than to conservation science. There is no question that immersion provides the best chemical and environmental control, the most successful impregnation of difficult woods, and the most responsible approach to worker safety during a large-scale wood conservation project. Nonetheless, the cost constraints of building large immersion tanks for each project made the lesser techniques viable in the past. Conservation ethics requires that the best possible treatments be selected.

As an aid in assessing the condition of the lock prior to treatment, 28 borings from 14 locations throughout the structure were obtained. In addition, five loose structural members were also analyzed. The moisture content of the oak samples ranged from a low of 129% to a single recorded high of 433%. Fourteen of the samples were identified as Class III woods. A Class III wood has a moisture content of less than 185% and is considered to be minimally degraded. Four of the remaining samples were identified as Class II woods, with moisture content between 185% and 400%. These woods are considered to be degraded, but retain significant cell structures. The single Class I wood sample was all but destroyed during extraction. The specific gravity of the samples ranged from 0.20 to 0.51. If the specific gravity of the Class I wood sample is excluded, the other two classes of wood yield a mean specific gravity of 0.31 for the Class II and 0.43 for the Class III woods. Sound oak has a general

specific gravity of 0.59. Both moisture content and specific gravity tend to reflect the degree of degradation in the cellulose component of the wood.

Stereo microscopic examination of the remaining samples showed embedded debris in the form of fine clay and silts in the degraded exterior portions. This was not surprising due to the nature of the surrounding soils and the feeder spring that supplies the lock area. Oxidation of the woods' surfaces was in most cases pronounced, although several samples retained natural coloration after the first inch of penetration. This is due in part to oaks natural resilience and to the anaerobic conditions obtained under the silt in some locations. Minimal evidence of bacterial or fungal attack was visible.

SCIAA Conservation and Crane Company staff poses with the last load of the Gronauer Lock materials. (SCIAA photo courtesy of Jonathan Leader)

A national carrier transported slightly more than 50 tons of wood to the SCIAA Conservation Laboratory. The costs of the transportation and the choice of carrier were determined by the people of New Haven, Indiana. The carrier chosen was a reputable company with experience in moving perishable, time sensitive materials. They did an excellent job. The wood was swaddled in burlap that was kept soaked with water and under taps to minimize evaporation and subsequent damage. The Crane Company accomplished the loading and unloading of the wood. This firm has been a valued support to large wood conservation projects throughout the state. Not only did this firm move the Brown's Ferry Vessel into the laboratory at the start of that project, but also successfully transported the completed 1740s coastal merchantman to the third floor of the Rice Museum located in Georgetown, SC. Their work on this project was equally professional and smooth.

The lock was initially treated with a lower molecular weight of PEG to ensure maximum penetration of the oak and poplar timbers. This was followed by higher molecular weights of PEG to ensure cellular support. Careful monitoring of the PEG's uptake by the wood through microscopic examination was essential for determining the treatment's end point. Once this was reached the wood was slowly dried in a carefully controlled humid environment.

No long-term public conservation project exists in a state of isolation. Public awareness, interest, and approval are all necessary to the successful completion of these types of programs. Fortunately, this project had Mr. Craig Leonard, a historic architect, on site in Indiana to act as liaison and outreach coordinator.

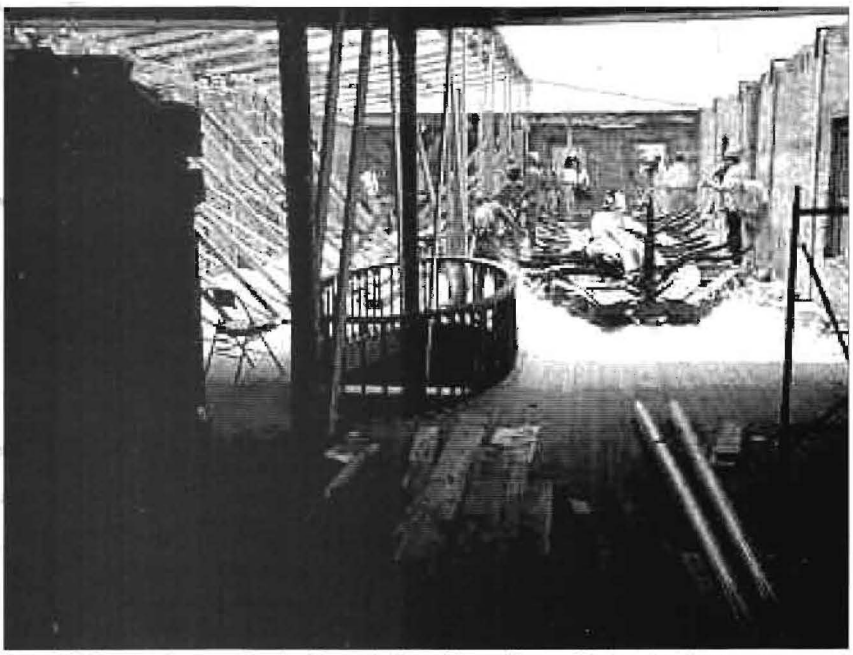
While the lock was being treated at the SCIAA Conservation Laboratory, exhibit consultation continued with Indiana State Museum. The Indiana State Museum had outgrown its original building and was in the process of a complete renovation. This provided for a very interesting progression of exhibit plans for the completed lock structure. The same national carrier returned the conserved lock elements to Indiana. The pieces were placed in secure storage while the new museum took shape. The groundbreaking for the new building took place on August 30, 1999. Indiana Governor Frank O'Bannon cut the ribbon on the new facility on May 22, 2002.

The Indiana State Museum is now a 270,000 square-foot structure. This includes a three-story, 130,000 square-foot museum, a four-story, 100,000 square-foot administration building that is joined by a 200-foot bridge spanning the Central Canal, as well as a 40,000 square-foot IMAX Theater. The Office of the State Archaeologist is very pleased that this new museum will now house, as one of its primary exhibits, the Gronauer Lock.

Rolling on the River

By Jonathan M. Leader and Christopher F. Amer

The Brown's Ferry Vessel was moved to the third floor of the Rice Museum, Georgetown, SC, in 1992. The 1740s coastal merchantman had been conserved at the Office of the State Archaeologist Conservation Laboratory for the seven years leading up to the move. The roof of the museum was removed and the vessel was very carefully and precisely hoisted four stories into the sky and placed on the prepared floor exactly toeing the previously arranged marks. Success was achieved and everyone went home to prepare for the next phase.



A and B Construction moving the Brown's Ferry Vessel forward byhand using a come-a-long. (SCIAA photo courtesy of Jonathan Leader)

The reconstruction phase lasted from 1992 through fall of 1998. It too was successful with the vessel being reconstructed by hand with precisely fitted supports and 100s of feet of carefully cut and threaded stainless steel rod. Normally the conclusion of a project spanning two decades would be a clarion call for Miller time; there was just one small problem. Half way through the reconstruction of the vessel and the restoration of the historic building containing the exhibit an architect had decided to unilaterally shift the position of the elevator 90 degrees. Instead of the elevator opening into a commodious area parallel to the vessel, it now opened immediately into the aft starboard section. This change required that the elevator users be remarkably supple to avoid being impaled on the vessel's futtocks and transom.

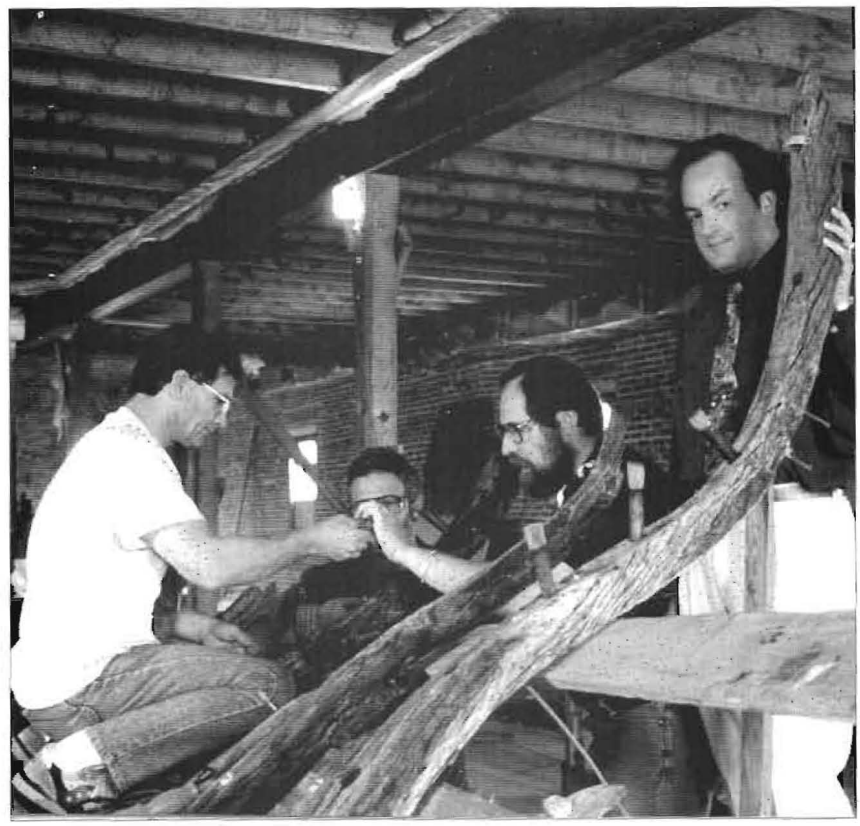
Brown's Ferry Vessel being placed on the third floor of The Rice Museum, Georgetown, SC, in 1992. (SCIAA photo courtesy of Jonathan Leader)

The elevator's original intent had been to facilitate the physically challenged visitor's ability to view the exhibit. This was now in jeopardy. Something had to be done, but what? The only solution was to move the six ton reconstructed vessel forward six feet.

Three-inch hard wheel ball bearing supported casters attached to steel plates were the tools of choice. "L" shaped attachment struts were produced from lumber and the casters attached to the struts. The struts were than screwed securely to the 4 x 4 inch under scaffolding of the vessel. Additional 2 x 4's were attached to the edges of the scaffolding and to the uprights located on the starboard side to ensure that all

portions would move as a single unit. A hand operated come-a-long was bolted to a short length of 4 x 4 and the whole unit was lag bolted to the third floor's main support beam. Chains were secured to the under scaffolding and the vessel made its way forward inch by inch. Seven hours after the initiation of the move the vessel was in its new position. It was safe, sound, and with plenty of space near the elevator to accommodate wheelchairs or other conveyance.

Large object conservation and exhibit calls for flexibility and creativity. Fortunately, both the staff of the Rice Museum, the volunteers, and the staff at SCIAA are all up to the challenges. We would like to specially acknowledge the sterling work of Mr. Bruce Brown of A and B Construction and his crew. One would be hard pressed to find a more professional and capable group. Funding for the work was provided by a grant by the Save America's Treasures program.



Harold Fortune, Christopher Amer, and Jonathan Leader reconstruction the Brown's Ferry Vessel on the third floor of The Rice Museum, Gerogetown, SC with director Jim Fitch looking on. (SCIAA photo courtesy of Jonathan Leader)

The upgraded exhibit produced by the staff of the SCIAA will be presented in the next issue of the *Legacy*.

CLUES FROM THE PAST: SOUTH CAROLINA TEACHER'S GUIDE AVAILABLE SOON!

By Jonathan M. Leader

Several years ago the SCIAA produced a guide for teaching archaeological concepts and philosophy in the public schools. *Can You Dig It?: A Guide to Archaeology in the Classroom* was an instant success and enjoyed a long run in classrooms throughout the state. As with all publications, eventually *Can You Dig It?* became dated. Enter Ms Darwin Ramsey, a graduate student in the University of South Carolina's Sociology Department and Museum Studies Certificate Program. Ms Ramsey needed a project to assist in the completion of her course of study and the rewriting of the teacher's guide was precisely her area of interest.

Working closely with the State Archaeologist, the SCIAA Director for Outreach, and members of the archaeology and education community, Ms Ramsey completed the project in record time. Divided into four sections, the guide provides teachers with the necessary understanding and hands-on projects to foster an understanding and appreciation of archaeology. The sections are: Fundamental Concepts used in Archaeology, An Overview of South Carolina's Cultural History, The Process of Archaeology, and Issues in Archaeology. Two appendices, a timeline and an Internet resource guide, are included as well. Well written and researched, this guide should achieve the same level of use and acceptance of the original *Can You Dig It?*.

The guide will be available on CD shortly and a hard copy version will be made available when funding permits. The CD version is in Adobe Acrobat and the software firm provides a free reader for both Macintosh OS and Windows based computers. The reader can be downloaded from the Internet at : http://www.adobe.com/products/acrobat/readstep.html,

http://www.adobe.com/products/acrobat/readstep.html. The CD version will be available to the public at cost, plus mailing. If you are interested in receiving a CD version of the *Clues from the Past*, or if you wish to donate funds towards the hard copy publication, please send your name, address, telephone and email address to the attention of Nena Powell Rice, Director of Outreach, SCIAA-USC, 1321 Pendleton Street, Columbia, SC 29208, <nrice@sc.edu>, (803) 777-8170.

Mystery of the Washington Street United Methodist Church's Cornerstone

By Jonathan M. Leader

The historic Washington Street United Methodist Church is celebrating its 200th anniversary. Founded in 1803, the historic church was the first to be built in Columbia and is the oldest continuing congregation. It has been the site of many historic personages and events and at least one case of mistaken identity. The church was accepted to the National Register of Historic Places in 1970.

The Reverend Mike Alexander using the GPR on a buttress of Washington Street Methodist Church in Columbia. (SCIAA photo courtesy of Jonathan Leader)

During the course of its long history, the church has been moved about the property, expanded, burned, and rebuilt. The burning of the church by union forces during the occupation of Columbia is an interesting footnote to that event. According to church history, the soldiers were actually looking for the First Baptist Church where the Secession Convention of 1860 had been held. Misdirected to the Washington Street Church, the soldiers burned it to the ground amid chants of "burn the heathen temple." Undaunted, the congregation rebuilt the church finishing in 1875.

When the main building was modified and later rebuilt, the cornerstone was removed and the contents replaced. The items known to have been placed in the cornerstone are of great importance to church and state history. The Bicentennial Committee wished to locate the cornerstone, open it as part of the celebration, preserve the contents, and replace them with contemporary items for the next two hundred years. There was only one small problem; no one knew where the cornerstone was located.

The additions and modifications that took place after the rebuilding of 1875 were sufficient to make it impossible to simply locate the cornerstone. The areas that a cornerstone would normally occupy were totally obscured. What to do? Knocking holes in the foundation was out of the question.

The church contacted the Office of the State Archaeologist for consultation. They had heard that a ground penetrating radar (GPR) unit was available and wondered if this might be a solution. The answer to their question was a qualified yes and no.

GPR has been successful in mapping structural walls. In those instances the equipment used a 1.5 GHz antenna that provided a very shallow penetration of the target with fine-grained resolution. The equipment available in Columbia was a 900 MHz antenna that had never been put to this purpose before. Nonetheless, it was agreed that an attempt would be made.

The Reverend Mike Alexander and Ms Maxine Sullivan, representing the church, assisted in the deployment and use of the GPR.

Each corner of the building facing Washington Street was thoroughly tested for voids. The corners produced by the decorative buttresses on either side of the main doors were tested as well. The equipment performed flawlessly showing substrata and other inclusions within the brick facade. Unfortunately, it showed no void or area consistent with a cornerstone.

The church records provide a very clear description of the cornerstone. Careful scrutiny of the buildings facade identified two areas that met the description. Neither location was in a corner or even at ground level. They were both on either side and above the level of the main doors.

Borrowing equipment used by the craftsmen restoring the exterior of the building, the GPR was raised to the level of the target areas. As before the equipment performed flawlessly and this time identified a void behind the right hand side decorative facing. Since this was a nontraditional location for a cornerstone, a second opinion was sought from the architectural restorers. They concurred that given the description and other available information that the facing was most likely the cornerstone. In due course the facing was removed. The void behind the decorative stone conformed to the space as described, but contained no box or other items.

The mystery of the cornerstone has yet to be solved. The Bicentennial Committee is soliciting information from the congregation and community as to the possible removal of the cornerstone box during repair work or other activities. The Office of the State Archaeologist continues to assist the Washington Street United Methodist Church in their efforts.

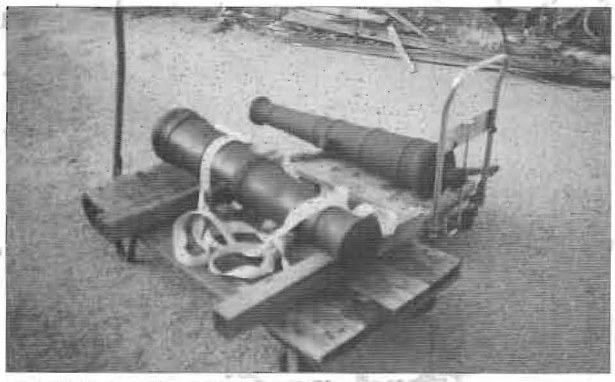
The Reverend Mike Alexander, Maxine Sullivan, and their assistant locate the void behind the marble marker on the front facade of the Washington Street Methodist Church in Columbia. (SCIAA photo courtesy of Jonathan Leader)

Jonathan Leader, Maxine Sullivan, and Reverend Mike Alexander standing in front of the void exposed during the investigation of the missing cornerstone at the Washington Street Methodist Church in Columbia. (SCIAA photo courtesy of Jonathan Leader)

Moving Cannons to Moncks Corner

By Jonathan M. Leader

In 1986, the South Carolina Institute of Archaeology and Anthropology recovered three cannons from a British gunboat sunk by General Wade Hampton during the American Revolution. As they were lost in a raid, the cannons had been loaded and made ready for action. Once recovered, the cannons were painstakingly documented, disarmed, and conserved at the SCIAA Conservation Facility. Their contents included the expected round shot, but also bar shot, scraps of metal, a powder bag, and other iron items. Needless to say, the cannons and their contents were going to eventually make a sterling exhibit. It was always intended that the exhibit would be located at the Berkeley County Museum in Moncks Corner, SC, as this was the closest appropriate facility to the area from whence the cannons came. A generous donation made by a local supporter of the Berkeley County museum, the Institute, and historic preservation has ensured that this will come to pass.



The South Carolina National Guard preparing for the cannon lift. (SCIAA photo courtesy of Jonathan Leader)

The two largest cannon weigh between 800 and 1,000 pounds apiece. The third cannon, a monkey-tailed swivel gun, weighed less than 100 pounds. This is not an excessive weight for cannon, nor are they overly large. Unfortunately, the vehicles normally available for moving items of this nature are no longer available from the motor pool. This left something of a quandary as to how to effect the delivery of the cannon.

Debra Reynolds of the Berkeley County Museum and Jonathan Leader of SCIAA with the "gift" wrapped cannons at the Santee Cooper on-site secure storage facility. (SCIAA photo courtesy of Jonathan Leader)

The conserved Lewisfield wreck cannons ready for transport. (SCIAA photo courtesy of Jonathan Leader)

Enter the South Carolina National Guard. General Spears has been a solid supporter of historic preservation for many years. With the assistance of LTC Peter J Brooks, Director of Public Affairs and Community Support, it was possible to have the move incorporated into a transport-training project. On Saturday, December 7, 2002, CPT Gayle, SGT Jack Woodford, SPC Lewis Wilson, WOC Michael Byrd, and SPC William Ginn assisted in the loading, transportation and unloading of two cannons from SCIAA to the Berkeley County Museum located in Moncks Corner. Their work was flawless.

Santee Cooper Corporation is also assisting the Berkeley County Museum with this project. Mr. Darrell Weise, Ms Mary S. Bell, and Mr. Wayne Lee coordinated with the Guard and with Ms Debra Reynolds of the Berkeley County Museum. They have ensured that the cannons are secure until such time as the exhibit structure is completed by the museum.

The presence of the cannons will act not only to provide a sterling exhibit, but will provide a well-deserved sense of accomplishment to the museum's supporters. County museums rarely receive either the support or praise that is their due. The Berkeley County Museum is providing a model for what can be done when dedicated staff and the public work together.

OFFICE OF STATE ARCHAEOLOGIST ENGAGED IN REORGANIZATION (PART 1)

By Jonathan Leader

The divisions that make up the Office of the State Archaeologist located in the Pendleton Street building at the University of South Carolina are engaged in redefining office space, personnel and procedures. The redefinition is designed to enhance and support the work of the clients of the division. The highlights provided below focus on the Site Files.

The space available for researchers in the Site Files had diminished over the last several years. Researchers, reports, maps and other documents were all competing for the same limited space. The State Archaeologist voluntarily moved to a smaller office on the second floor allowing the first floor office to become a secure document space. The shift relieved the congestion and has doubled the available research space in the Site Files.

The staff of the Site Files had diminished in effective work due to the geometric rise in site file use over the last several years. There was widespread agreement both within SCIAA and without that an additional staff position was needed. Unfortunately, the present fiscal reality has made it impossible to receive new staff funds from either the university or the state. A creative solution was found when the fulltime-classified Publication position was moved to the Site Files. The newly created Archaeological Site File Coordinator position made it possible for the Site Files to be open by appointment five days a week during normal business hours.

Document access has always walked the uncomfortable line between the need to be usable and the need to be secure. Several thefts and destruction of documents in the Site Files over the last several years brought this issue to a head. In a move designed to meet the clients need while maintaining the Site File's legal mandate the decision has been made to reduce all site file related documents to digital format and to eventually make these materials available over the Internet through a secure gateway. As previously mentioned, the fiscal reality of the state has been very difficult. Fortunately, pilot funds were received from the SCDOT for a GIS study of the Site File Database and were matched by SCIAA funds. This resulted in a base level of digital data and the identification of critical areas for future work. The SCIAA is presently building on this base updating the database through the year 2003 by the use of SCIAA funds alone. The necessary long-term funds are still problematical, but a cooperative initiative with SCDOT to seek Federal Highway funds is presently being explored and holds promise.

The funding for the web-based access to the database is a separate project. Mr. Robert Morgan of the United States Forest Service is working with the office on a possible partnership. The partnership funds would permit the hiring of a master's level computer engineering student for one year. During which time, the student will produce the Internet gateway, digitized interactive site form and GIS interface for automated update of the database. Once this is done other digitized supporting documents will be linked as well. We are indebted to Mr. Morgan for volunteering to assist this project.

The Office of the State Archaeologist and the USC School of Library and Information Science completed a cooperative project that resulted in the design and testing of the procedure now in use for the digitizing of SCIAA documents. Unsurprisingly, the process relies on the use of graduate assistants as a means of controlling costs. The recent doubling in student hiring costs at the USC made necessary by fiscal constraints has made the continuation of this activity very difficult. Nonetheless, to date the Office of the State Archaeologist has funded the digitizing of the Research Manuscripts from earned overhead. As additional funds become available, the Anthropology Series will be completed and the Monographs and SRARP publications will be digitized. Tax-deductible donations to this worthwhile cause will be gratefully accepted and acknowledged.

The first floor Education room now boasts a study carrel with a dedicated computer. This computer contains the updated digital version of the award winning Comprehensive Bibliography of Archaeology for South. It also contains the working version of the Site Files Project Tracking database. As both of these databases are in File Maker format active field search of the database is supported. The Project Tracking database is updated weekly ensuring current information. Placing the Data Corner in the Education room frees research space that would be otherwise occupied in the Site Files. In addition, the digitized Research Manuscript Series in CD format is kept there as well allowing for quick access. The Anthropology series and Monographs in CD form will be made available as they are completed.

The cost of maintaining a copy machine has increased resulting in shift from $0.15 a copy to $0.25. As an aid to our increasingly computer literate client base, the Site Files permit the use of portable scanners brought by the clients to directly copy documents to their laptop computers. If you are planning to bring your scanner, please let Ms Diane Boyd, Archaeological Site File Coordinator, know, as the electrical outlets in the map are limited and should be reserved for that use.

The Office of the State Archaeologist will continue to seek creative solutions to ensure the best possible service to our clients within the framework of our legal mandate. The State Archaeologist is always willing to meet with colleagues to discuss these or other issues and has an open door policy.

In the next issue of the *Legacy* the focus will shift to the Curation Division.

Applied Research Division

Battlefield Research Continues At SCIAA

By Steven D. Smith

The Military Sites Program of the Institute's Applied Research Division (ARD) continues to grow. Over the last two years it has completed several projects and is looking forward to new opportunities in 2003. In September of 2002, the program completed its portion of a nation-wide survey for the National Park Service's (NPS) American Battlefield Protection Program (ABPP). The purpose of the ABPP survey was to determine the most current preservation status of thousands of Revolutionary War sites across the eastern United States. The sites were pre-selected by a panel of experts and most had been listed on the National Register many years ago. The ABPP wanted to know if the sites still existed or had been lost to development since their listing. They also wanted to know if the traditional locations and activities associated with the sites were accurate and authentic. The ABPP contracted with hundreds of public and private archaeologists, park rangers, and historians to research and visit the sites and provide a status update. The sites were divided into two categories; battlefields and associated sites such as campgrounds and hospitals. As Principal Investigator for SCIAA, I was responsible for researching the status of 39 Revolutionary War battlefield and associate sites in South Carolina, North Carolina, and Tennessee. The project began with a week-long training session at Monmouth, New Jersey, where I learned the ABPP's methodology for data collection using the Battle of Monmouth as the working example. The workshop was to insure that the same kinds of information would be gathered for each site assigned, and that the information would be reported in the same format. Then for the next two years I conducted research in the primary documents, visited the sites, took photographs and GPS locations, interviewed local experts, and compiled numerous data files for each site. While the project was primarily my responsibility, I got excellent and timely rescuing from the Institute's Christopher Clement, Tamara Wilson, and Tommy Charles. Additional help came from Kristen Labrie, a graduate student in the Department of Anthropology, historian Samuel Fore of the South Caroliniana Library, archaeologist Zada Law of Nashville, Tennessee, and student Nathan Smith of St. Peters Elementary School.

Although the project was far more intensive and time consuming than I ever imagined, the research and travel throughout the tri-state area gave me a unique perspective of the war that I could not have gained by any other means. For instance, prior to this project, I had the misconception that 18th century communication and maneuver was slow and time consuming. Instead, war events and fortunes were in constant ebb and flow. Communications was rapid; couriers got messages to far-flung commanders usually within a day or two. Soldiers covered more ground in much less time than I ever imagined. Foot soldiers could force march 20 to 30 miles a day for several days and mounted troops covered as much as 60 miles or more a day in many instances. The war's pace was amazing. Francis Marion's partisans, for instance, were on the move almost constantly in the Fall of 1780 and Spring of 1781, never camping for more than a few days in any one location. I was also impressed with the professionalism of the British Army. From their correspondence and maneuvers it seems to have never occurred to them that they might loose a battle against the Americans. In battle after battle, they deployed quickly and pushed frontal attacks. When attacked they counter-attacked as soon as possible. More often than not their confidence led to victory, especially against American militia. But when it didn't, as at Kings Mountain and Cowpens, they were quite shocked.

Some of the South Carolina sites I visited were Eutaw Springs, Fort Watson, Ninety Six, Fort Lyttleton, Old Dorchester, Waxhaw Church, Pegues Place, Belleville Plantation, and Snow's Island. In North Carolina, my sites extended from Halifax Historic Site in the northeastern part of the state to Franklin in the west. Tennessee sites were associated with the Kings Mountain campaign and skirmishes with Cherokee Indians.

Although an overall success, some battle sites could not be found within the time allotted, especially Cherokee town sites in western North Carolina that were raided by backcountry militia. A few associated sites were simply too big to

complete within a limited timeframe. For instance, the entire Race to the Dan Campaign was considered one associated site. This campaign began after the battle of Cowpens when Daniel Morgan defeated Banastre Tarleton. Learning of Tarleton's defeat, Lord Cornwallis attempted to catch Morgan and Nathanael Greene before they could combine their forces and reach safety in Virginia. Thus the chase took both armies all the way from Cowpens, South Carolina, through North Carolina, to the Dan River in Virginia. Needless to say, this "site," which covered over a hundred miles, could not be researched, visited, GPS mapped, and the data compiled all in a single week as required by funding. Still, identifying the routes and various skirmish sites on maps proved to be a useful exercise and demonstrated that it was truly a race from river ford to river ford, the British always just a day or a few hours behind.

While this project progressed through 2001 and into 2002, shorter projects were initiated and completed. A historic context for a World War II African American Noncommissioned Officers' Club was written for Fort Bragg, North Carolina through the U.S. Army Corps of Engineers Research Laboratories in Champaign, Illinois. As part of this project, I had the honor to interview veterans of the 555th Parachute Battalion, the only African American parachute unit in World War II.

Another short-term project recently completed was in assisting the South Carolina Palmetto Conservation Foundation with their collector's survey of the Revolutionary War Camden Battlefield. The foundation is working to acquire the core battle area for long-term preservation. The foundation contracted with Jim Legg and I to examine artifacts found by relic collectors at the Camden Battlefield and gather information on their general location across the battlefield landscape. Jim was responsible for the analysis of the collections and mapping of artifact locations while I concentrated on a short battle history. The results are providing insights on the maneuver of American and British units during the battle. This project was also funded by the ABPP.

I await future opportunities as they come, but meanwhile I am assisting the South Carolina National Guard in a history of the modern guard and continuing in the never-ending pursuit of Francis Marion, always just a day or a few hours behind.

STEVEN D. SMITH RECOGNIZED BY THE COMMANDING GENERAL AT FORT LEONARD WOOD

By Nena Powell Rice

Steve Smith received a Commanding General's Certificate for his work in initiating and coordinating a Legacy Program Study Project on "The World War II Period Black Officers Club." Part of this study involved refurbishing a mural which hung over the fireplace in Building 2101. The mural depicts a black couple at a picnic. For over 50 years, the mural's artist remained unknown until extensive research by Steve Smith identified the artist as Staff Sergeant Samuel Albert Countee, an inspiring black artist at the time, serving with the 7th Training Group at Fort Leonard Wood. Mr. Countee later became a prominent artist in New York City. Steve Smith was able to locate relatives of Samuel Albert Countee and have them visit Fort Leonard Wood to view the mural. Steve Smith's work was recognized by the Cultural Resources Research Center at the U.S. Army Construction Engineering Research Laboratories and by William Leftwich, III, the Deputy Assistant Secretary of Defense (Equal Opportunity). The Fort Leonard Wood community graciously thanked Steve Smith for his efforts in preserving the cultural heritage of their community.

The author and field assistant Nathan Smith obtain a GPS location for the suspected site of the Battle of Long Island Flats in downtown Kingsport, Tennessee, July 2001. (SCIAA photo courtesy of Steven D. Smith)

Archaeological Research Trust

SCIAA Researchers Funded by ART in 2003

By Nena Powell Rice

On November 22, 2002, the Board of Trustees of the Archaeological Research Trust made decisions to fund four SCIAA researchers for the year 2003. A total of $9,082.40 was given.

Le Prince Research Project

James Spirek and Chester DePratter received $3,610.00 to continue their efforts to locate and identify the remains of a 16th-century French ship, *Le Prince*, that wrecked off Port Royal Sound near Beaufort, SC in 1577. The money in 2003 will be used in two phases. The Magnetometer Phase portion will cover the expenses associated with conducting the initial acquiring of magnetic anomalies. These expenses includes funds for crew per diem and lodging at the Waddell Mariculture Center (WMC), boat and generator fuel and oil, a roll of film and its development, and a miscellaneous category to cover purchase of sundry supplies associated with the computer, boat, or other unexpected costs. The Ground-Truthing Phase portion covers the expenses to visually inspect the anomolies by divers and possibly conduct limited testing. Expenses again include fieldwork costs, conservation costs for conserving and analysis of any recovered artifacts, and other unexpected costs.

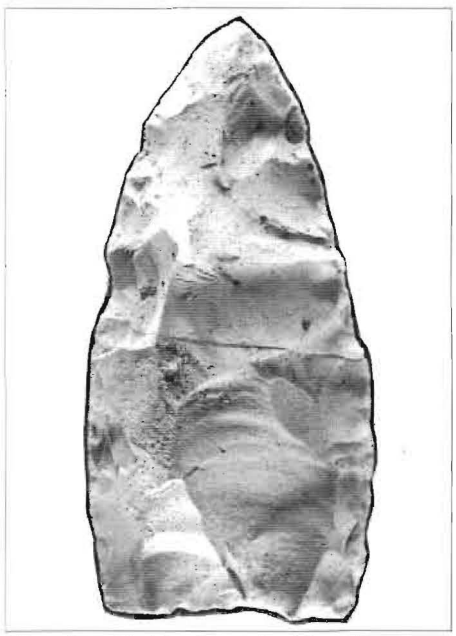
Testing and Analysis of Artifacts at the Patterson Site in Spartanburg County, South Carolina

Tommy Charles and Terry A. Ferguson received $2,000 to conduct testing and artifact analysis at the Patterson site in Spartanburg County. The Patterson site has the potential to provide information about the cultural utilization of soapstone in a habitation context by Late Archaic groups in the South Carolina Piedmont. The site also has the potential to provide chronologic control on the exploitation and use of soapstone in the region. The Patterson site is located in Spartanburg County, South Carolina near the Pacolet River Heritage Preserve managed by the SC Department of Natural Resources. Controlled surface collections conducted by Terry Ferguson in 1990 indicate the presence of a Late Archaic component at the site. A geophysical study (GPR and Magnetometry) was conducted on the site in the summer and fall of 2002 to test site formation models. This grant will help defray the costs of the analysis of the artifacts collected during the 2002 test excavations, to perform C-14 analysis, and help defray the cost of an expanded field effort in 2003.

Underwater Survey in Proximity to the Colonial Settlement of Childsbury, Berkeley County, South Carolina

Lynn Harris received $2,000 to conduct and underwater survey, involving diver swim searches, remote sensing, and preliminary site recording in proximity to the colonial settlement of Childsbury, on the west branch of the Cooper River. The Childsbury Town and Strawberry Ferry, located 30 miles by road and 60 miles by river up from Charles Town played a central role in the early colonial trade and commerce. The ferry started operating in 1705 and the settlement of Childsbury was established two years later. Childsbury and Strawberry Ferry have been identified as a high probability zone for finding significant submerged cultural resources like shipwrecks, abandoned boats, wharves, and concentrations of artifacts. This grant will help pay for fieldwork, field supplies, and stipends for three students.

Analysis of Paleoindian and Early Archaic Bifaces from the Big Pine Tree Site near Allendale, South Carolina



Biface from Big Pine Tree site, Allendale County, SC. (SCIAA photo by Daryl P. Miller)

Albert Goodyear and Kara Bridgman received $1,472.40 to conduct a laboratory analysis of Paleoindian and Early Archaic bifaces from the Big Pine Tree site (38AL143), placing these early

occupations within a broader Southeastern US framework of human adaptation. Early Archaic bifaces will be analyzed using attributes related to technology, style, function, and recycling for the Savannah River Valley. Big Pine will be compared with sites of similar age from Tampa Bay, FL to central NC. Due to its location on a chert quarry and floodplain, Big Pine Tree is critical toward understanding Early Archaic settlement variation across the Southeast. Likewise, the site is important for recognizing and documenting early Clovis settlement in the Southwest. An obvious Clovis occupation is present at the bottom of Big Pine Tree, which seems to share technological traits with sites in Tennessee, Kentucky, and Texas. The Paleo bifaces need to be retrieved and described in order to facilitate placing Big Pine Tree within the broader Clovis technological tradition of the Southeast. The funds will be used for Kara Bridgman to travel to Columbia and work 30 days on the analysis, which is closely related to her PhD dissertation.

Donors in 2002-2003

By Nena Powell Rice

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By David Masich, USC Development Office

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ART Activities in 2002-2003

By Nena Powell Rice

2002-03 was a great year for the ART Board of Trustees. The board meets four times a year in different areas around the state in conjunction with SCIAA archaeological projects in progress. These projects give the board the opportunity to meet the staff and allow the board to see the fieldwork being conducted first hand. We also combine these meetings with archaeological education and provide opportunities to meet the local community with several social gatherings planned.

On February 22-23, 2002, we held the meeting in Columbia in conjunction with the 28th Annual Conference on South Carolina archaeology, with the opportunity to meet Dr. William M. Kelso, premier archaeologist at the colonial settlement of Jamestown. On Saturday, the ART Board had the opportunity to attend the full-day conference and learn about current archaeological research being conducted in South Carolina.

On May 16-17, 2002, the ART Board was graciously hosted by member Doc Lachicotte in the Pawleys Island area On Thursday evening, Doc and his wife Martha hosted a cocktail/barbecue party at their home on Pawleys Island Creek. Between Doc, Walter Wilkinson, and myself, we found several homes for the board to stay overnight. On Friday morning, Doc made special arrangements for our board meeting to take place at the new Lowcountry Center at Brookgreen Gardens. After the meeting we packed a picnic lunch and boarded a boat at Wichi Wachi Landing for a boat tour around Sandy Island, on the Waccamaw River and surrounding creeks. The tour included a commentary on Sandy Island by SCIAA Board Member Christopher Clement, who recently surveyed and excavated several sites on the island.

This was the first year that we didn't meet in August. We were very fortunate to be invited to the Lowcountry near Beaufort for the November 21-22, 2002 meeting. On Thursday afternoon, we had the opportunity to meet at the site of Santa Elena/Charlesfort on Parris Island. SCIAA Board Member Chester DePratter shared further information about his and Stanley South's investigations of Charlesfort that occurred in October 2002. We stopped by the Parris Island Museum afterwards, and Curator Stephen Wise provided a tour of the exhibits. We all checked-in at the Marriott Fairfield Inn near Okatie for our overnight and drove over to Callawassie Island. Board Member Bill Behan graciously hosted a dinner for us at the River Club, where we also met the next morning for the November board meeting. After a lovely lunch, Bill drove of few of us around the island to show us special sites that he, as a landowner, is interested in protecting.

On February 21-22, 2003, we held the meeting in Columbia in conjunction with the 29th Annual Conference on South Carolina archaeology, with the opportunity to meet Dr. Rebecca Saunders from Louisiana State University. The luncheon and meeting was sponsored by Board Member Butch Wallace at the Capitol City Club. After the formal meeting, some members of the financial

ART Board Members and guests took a tour of Sandy Island at the May 2002 meeting near Georgetown. (Photo courtesy of Marion Rice)

ART Board Members gather at The Museum in Greenwood with their board and staff. Lyda Carroll, Director of The Museum is standing at the far right. (Photo courtesy of Marion Rice)

committee continued to meet, and some were able to come to a public lecture by Dr. Saunders titled, "Middle and Late Archaic (6,000-3,000 BP) Monumental Architecture: Examples and Implications." On Saturday, the ART Board again had the opportunity to attend the full-day conference and learn about current archaeological research being conducted in South Carolina. The evening banquet again featured Dr. Rebecca Saunders, and her lecture was titled, "A Monumental Undertaking: Excavations at the Fig Island Ring Complex." Fig Island is one of the cultural Heritage Preserves managed by the SC Department of Natural Resources, Heritage Trust Program.

On May 15-16, 2003, the ART Board traveled to the Greenwood area. Thursday evening, members of the board of The Museum in Greenwood and the Self Family Foundation hosted a lovely reception in our honor. On Friday morning, The ART Board drove to Ninety Six National Historic Site, where we held our meeting and had lunch. In the afternoon, we were treated to a very special tour of the park by Distinguished Historical Archaeologist Stanley South, who excavated at Ninety Six in the early 1970s.

In December, 2002, Jim Kirby (Past Chair) and Jim Spirek (SCIAA Board Member) rotated off the board after serving two two-year terms. The ART Board and SCIAA staff are very grateful for their service. Antony C. Harper stepped down as Chair and is now serving as Past Chair in 2003. Board members who remain on the board in 2003 are Lezlie Barker (Secretary), Bill Behan, Colin Brooker, Christopher Clement, Chester DePratter, Ernest L. (Chip) Helms (Vice Chair), David Hodges, Adam King, Kimbrell Kirby, Doc Lachicotte, Charles Peery, Butch Wallace, and Walter Wilkinson. We are very fortunate to have Russ Burns rotate back on the board as Chair. Also Christopher Amer, a SCIAA staff member, will take the place of Jim Spirek. At the May 2003 meeting, Ira Miller from Columbia joined the board, and we welcome him. Esther Shirley Gerard from Travelers Rest has rotated back onto the Board, and we welcome her back.

Stanley South (far left) led the ART Board on a special tour of Ninety Six National Historic Site. (Photo courtesy of Marion Rice)

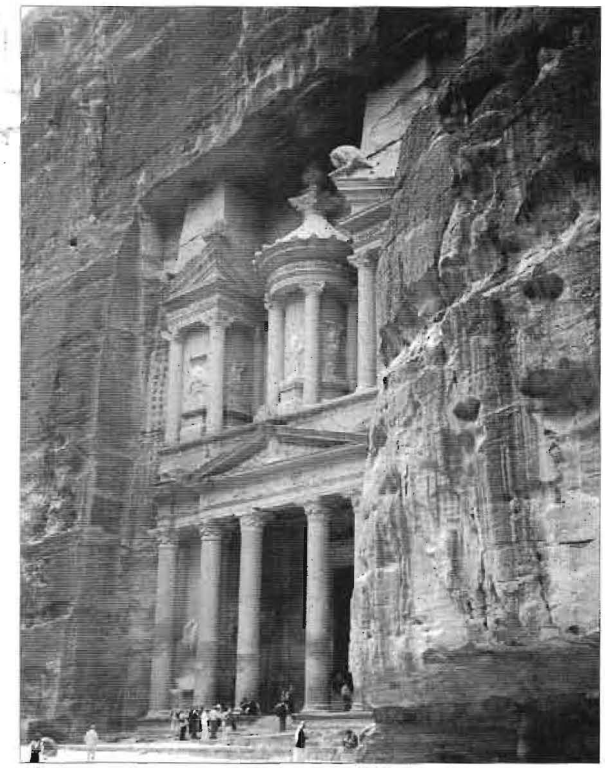
Special Activities

Our Journey Through Jordan and Egypt

By Nena Powell Rice

In November 1-16, 2002, I was the Trip Leader with a group of nine others, including Marion Rice, my husband, to Jordan and Egypt. My extraordinary group included Dr. Norman and Julia Khoury from Sullivans Island, SC, Dr. Carl and Elaine Johnson from Columbia, SC, Dr. Richard Cooper and Sally Anderson from Winchester, VA, Mrs. Lou Edens from Mt. Pleasant, SC, and Mrs. Jane Vance from Washington, DC. We were a bit apprehensive because of the threat of War on Iraq, but I was sure that the people I had met on my scout trip in June 2001 would take very good care of us.

I was right. From the moment we landed in Amman, Jordan on November 2, to our flight back to the states from Cairo on November 16, I felt the friendliness of the people. It was an incredible experience. On November 3, we began our journey heading south of Amman on the Kings Highway through the Old Ammonite Kingdom and visited Mt. Nebo, the traditional burial spot of Moses, with its commanding view of the Dead Sea and the Jordan Valley. It was a magnificent clear, sunny day, and our fabulous Jordanian specialist, Samir Amro, who traveled with us, pointed out the direction of Jerusalem, Hebron, and Bethlehem, within an hour's drive. The mosaics in the early Byzantine church were in extraordinary condition. We had the place to ourselves and felt very secure. Ten minutes away, in Madaba we saw the Mosaic Map of the Holy Land in St. George's Church, which represents one of the best-preserved collections of early Christian Byzantine mosaics from the 4th and 7th centuries, and visited the Archaeological Park with its Roman colonnaded street and some of the oldest mosaics in Jordan. We then drove south into the breathtaking scenery of Wadi Mujib, then visited the crusader castle at Kerak, with its labyrinth of underground galleries, rooms, and secret passages.



The famous Treasury at Petra, one of 800 tombs and monuments seen at this Nabatean capital city. (Photo courtesy of Marion Rice)

Beautifully preserved 4th century mosaics adorn the floor of the old Byzantine church at Mt. Nebo, the traditional burial spot of Moses. (Photo courtesy of Marion Rice)

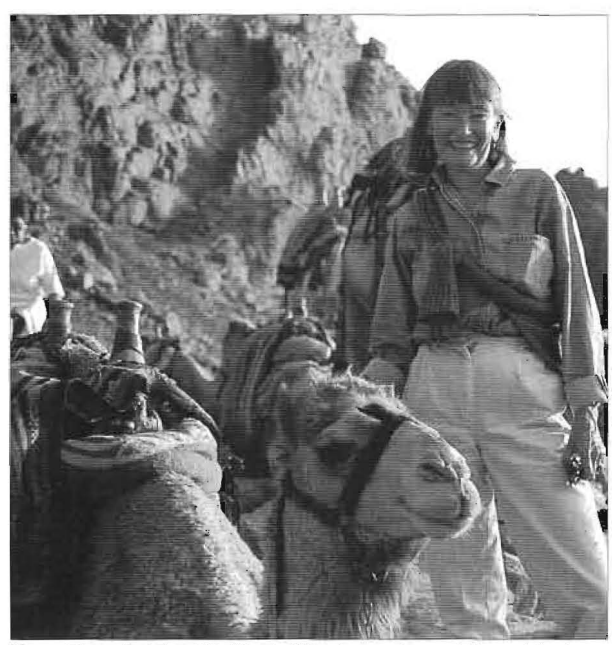
On the evening of November 3, we stayed at the Movenpick in the town of Petra and spent the next full day (November 4) hiking throughout the lost wondrous rock-carved Nabatean capital city of Petra, the Rose Red City. Passing through the fabled Sig on foot was very special while Samir pointed out dozen of temples, sculptures, and brilliantly colored rock formations. From that same well-secured spot, the Nabatean Arab Kingdom controlled one of the greatest international trade routes of the ancient world, the fabled "spice and incense route," which linked China, India, and

The St. Catherine's Monastery at the foot of Mt. Sinai in the Sinai Penensula. (Photo courtesy of Marion Rice)

southern Arabia with the rich markets of Greece, Rome, and the rest of the Mediterranean world. For approximately 500 years, between the 3rd century BC and the 2nd century AD, the Nabateans carved this fabulous city out of the Rose Red rock, of which over 800 individual monuments and tombs can still be highly appreciated today. We gazed upon the famous Treasury, and explored dozens of ancient temples, royal tombs, monuments, and the Roman theater. We had lunch in Petra, then walked up to the Byzantine church gazing in awe at more fantastic mosaics and other temples.

The next morning on November 5, we headed south for Aqaba passing the beautiful Wadi Rum area and came into Aqaba, located at the southern tip of Jordan overlooking the Gulf of Aqaba. Our guide, Samir took us to the finest bakery and the well known spice market, which is the freshest in southern Jordan. We stopped and had tea, then our bus driver and Samir drove us right up to the ferryboat, which we boarded to Nuweiba, Egypt on the Sinai Peninsula. Samir was able to upgrade us to first class, which we had almost to ourselves. Jordan captured my heart, and I plan to return there someday to spend a few more days and also visit Syria and Lebanon with Samir. He was a wonderful guide.

We drank champagne with our baked sweets and got started around 2:00 PM, arriving in Nuweiba, Egypt about 3:30. Hany Iskandar, our Egyptian guide was there to greet us. We cleared customs into Egypt and loaded everything on top of the unimog, then made our way to Hebiba Camp on the Gulf of Aqaba for a late lunch. We stayed overnight at the new Hilton located on the gulf.



Nena Rice climbing Mt. Sinai. (Photo courtesy of Nena Rice)

Early the next morning on November 6, we departed for the majestic and isolated monastery of St. Catherine's at the foot of Mt. Sinai. It was a very special visit, especially seeing the new museum, which houses thousands of 6th century manuscripts in Greek and a dozen other languages from the famous St. Catherine's Library, which is the largest religious library in the world, second only to the Vatican. We continued to Sharm El Sheikh, stopping at the active convent at Wadi Feiran, since the 4th century, and one of the Rock of Inscriptions along the way. We stayed at the Ritz Carlton Hotel overlooking the Red Sea in a room bigger than my house, but we arrived late and left early the next morning, so it was dark most of the time we were there.

We had an early morning departure on November 7 for our flight to Luxor, where we transferred to the new luxury cruise ship *Mirage*, which we would occupy for the next four nights. We immediately transferred to the West Bank to spend a full day in the Valley of the Kings and Queens. We visited the Temple of Hatshepsut and viewed the recently opened upper floor, then visited the Tomb of Nefertari in the Valley of the Queens, before it closed. Then we visited the Dier el Medina, the workman's town, and the tombs of the Nobles, including Rekhmire, Menna, and Sennofer. Then drove to the Scribe's Tomb of Sennedjim. We then had a box lunch and went across the street to the Madinet Habu, Temple of Ramses III, then to the Ramesseum to view the huge statue of Ramses II

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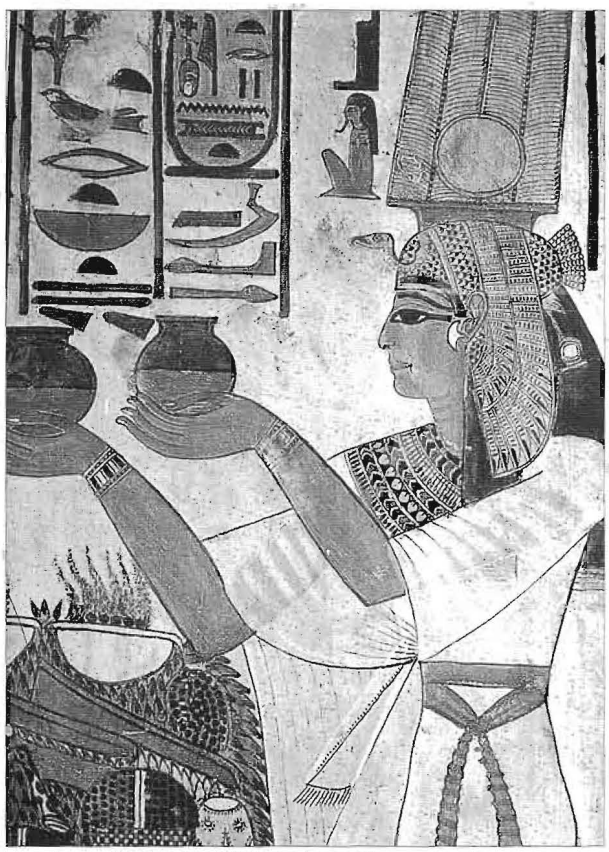


Detail from the Tomb of Nefertari, favorite queen of Ramses II, in the Valley of the Queens, West Bank of Luxor. (Photo courtesy of Nena Powell Rice)

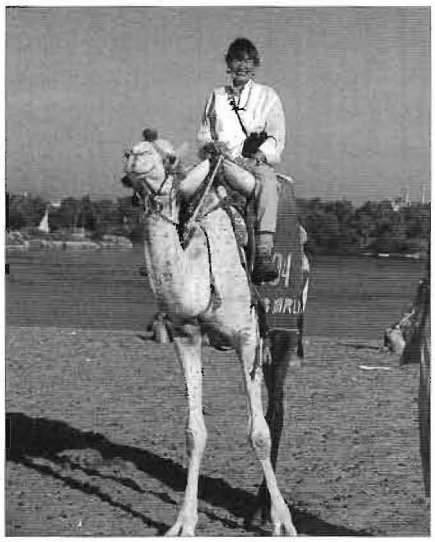
that had toppled over during an earthquake. We then went to the Valley of the Kings and visited the Tombs of Ramses IV and Ramses IX. We stopped by the Colossi of Memnon on our way back to the East Bank. Before dinner, we attended a lecture by Dr. Sabry Aziz, who was Director General of the Luxor Archaeological Authority, but has now been appointed Director General of Egyptian Antiquities, the position Zahi Hawass used to hold. He flew to Luxor from Cairo around our schedule just to be with our group. We spent our first night on the *Mirage* with its large rooms and excellent food.

We had limited time the next morning on November 8, so we first visited the Luxor Temple before the huge crowds arrived. We next visited Karnak Temple, then spent the last hour and a half in the beautiful Luxor Museum. We were unable to visit the Chicago House of the Oriental Institute (University of Chicago) where we would have had a private briefing by the local archaeologists concerning their efforts to preserve the antiquities, due to the boat sailing much earlier than was anticipated. We set sail at 1:00 PM as they were serving lunch, and we had a pleasant afternoon sailing up the Nile (south) to Esna, where we crossed the locks that evening. We spent most of the next day (November 9) sailing past fishing villages, waving to children playing and swimming on its banks, and stopped at the two glorious sites of Edfu and Kom Ombo.

We arrived in Aswan right across from the Tombs of the Nobles the next morning on November 10, and immediately drove to the harbor where we caught our boat out to the Temple of Philea. We then visited a prominent Coptic Christian Church on the way to the beautifully laid out Nubian Museum. We then visited the Aswan quarries and the unfinished obelisk, and returned to the boat for lunch. We enjoyed an afternoon felucca ride around Elephantine Island and stopped on the west bank and rode camels up to St. Simeon Monastery. I was able to do a little birdwatching in Egypt, and Hany was able to help me with his knowledge of ones I had not seen before. We spotted the hopoo, egrets, grey herons, plovers, wheatears, the Egyptian kingfisher, hawks, and kites. We then continued our sail past the Old Cataract Hotel, where Agatha Christie wrote *Death on the Nile* and as the sun set, made our way back to the ship for dinner and overnight. Aswan is my favorite place in Egypt, and I felt so safe and at peace there.

We disembarked from the ship at 10:00 AM on November 11 for our flight to Abu Simbel, where we toured the Temples of Ramses the

Nena and Marion in front of Avenue of Spinx that lead to the entrance of Luxor Temple. (Photo courtesy of Marion Rice)



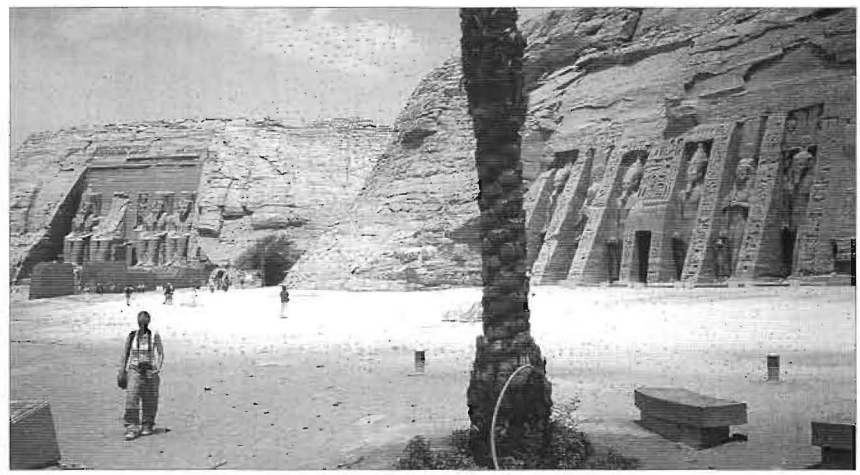
Nena Rice on camel near St. Simeon Monastery near Aswan. (*Photo courtesy of Marion Rice*)

Great and Queen Nefartari, as well as viewed the remarkable engineering feat that saved these great temples from the rising waters of Lake Nasser. We reboarded our plane back to Aswan and onto Cairo where we stayed at the fabulous Mena House Hotel, with garden rooms and pyramid views for the next four nights. Hany was able to upgrade two of the rooms, and he also arranged a very special dinner in the Shanglali Room, which is usually reserved for Kings, Queens, and other dignitaries. We were treated like VIP all along the way.

After breakfast on November 12, Dr. Zahi Hawass, recently appointed the Supreme Council General Director of Antiquities for Egypt, joined us at the Mena House in the morning because of his very busy schedule and gave us a talk with slides discussing many important issues. In the Cairo area, we had an armed policeman with us at all times and sometimes a police car with four men would follow us around. We felt very safe all of the time. We visited the Great Pyramid of Khufu (Cheops) at Giza and climbed up into the great chamber that held his sarcophagus. We visited the Solar Boat Museum, then looked into one of many tombs on the west side of the Great Pyramid of Khufu. We then a had a special entry to the Sphinx, given to us by Dr. Hawass. We drove into Old Cairo, and visited the Hanging Church, the church of St. Sergio, Benjamin Ezra Synagogue, then came back to Giza for lunch at the Caviar. We went around the corner and had a demonstration on how the papyrus paper is made. We had a lovely dinner and overnight at Mena House.

The next day on November 13, we toured Saqqara, Dahshur, and Memphis. Lunch was at the Saqqara Country Club and dinner was at the Mena House Greenery Restaurant. Our fourth day in Cairo on November 14, was devoted exclusively to the Cairo Egyptian Museum. On our way we stopped for a short tour of the Citadel and the Alabaster Mosque of Mohammed Ali and viewed the overlook of Cairo and the Sultan Hassan Mosque. We then went directly to the Egyptian Museum and Hany efficiently took us upstairs first to avoid the immense crowds. We were the last group to leave, and we enjoyed the last hour with hardly anyone around. Since it was Ramadan, everything closed much earlier than expected. Lunch was at the Arabesque and dinner was at a private Egyptian home.

On our last day in Egypt on



Monuments to Ramses II and his favorite wife Queen Nafertari at Abu Simbel. (*Photo courtesy of Nena Powell Rice*)

Sally Anderson, Nena and Marion Rice, Julia and Norman Khoury, Richard Cooper, and Carl and Elaine Johnson inside St. Simeon Monastery near Aswan. (*Photo courtesy of Marion Rice*)

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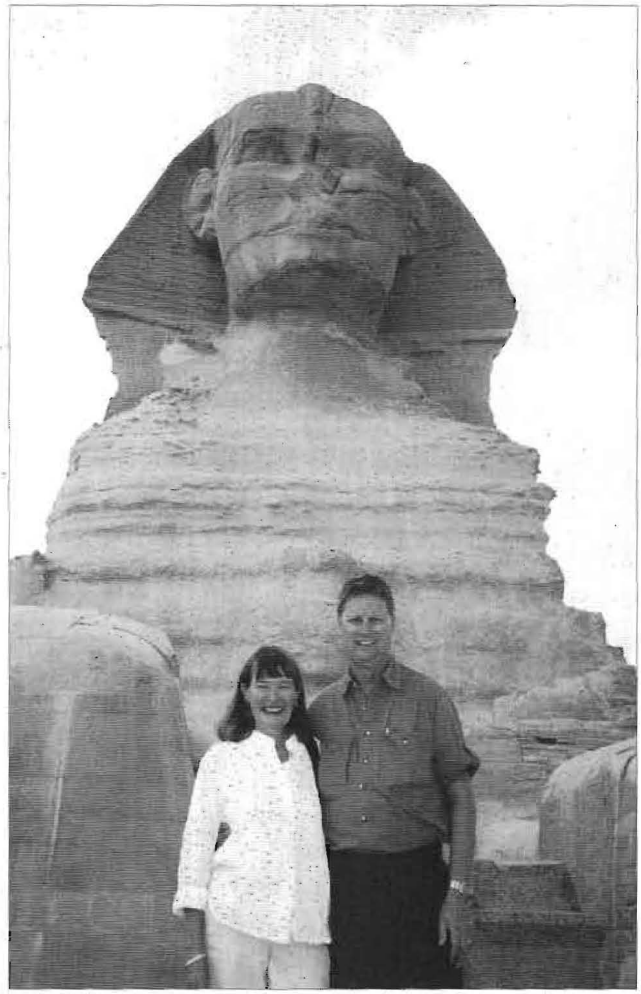
November 15, we decided to drive halfway to Alexandria from Cairo to Wadi Natrun to visit these famous monasteries from the 4th century. Hany Iskandar, our guide who has degrees in Egyptology, Art History, and is currently studying Near Eastern Civilization, is a Christian. His great uncle has been a monk at the St. Macharius Monastery for 40 years. We were the only tourists. There were a few family visitors to other monks. It was very special. We then drove 15 km to view the Wadi Natrun, which is made up of huge salt deposits where Pharaonic Kings came to use the salts (natrun) for mummification. Lunch was at the Swiss Air Restaurant in Giza on the Nile across from Cairo. We had the afternoon free for last minute catching up, and had our rooms until 6:00 PM when we gathered for cocktails and dinner. We left the Mena House at 9:30 and drove to the airport for our 10:30 check-in, which took nearly two hours. We flew out at 1:30 AM on November 16 and arrived back in Columbia at 6:00 PM our time the same day.

That was a whirlwind description of a very intense, educational experience. I do hope one day to take time to sit down with my 160-page journal and type it out with my many happy memories. I have fallen in love with the Middle East after many years of traveling in Middle and South America. But, as many of you know, the whole world is my home in my heart, and there are still many places to explore.



Nena and Marion on Giza Plateau in front of the Spinx. (Photo courtesy of Marion Rice)

The group traveling with Nena Powell Rice to Egypt and Jordan share a special meeting with Dr. Zahi Hawass, Supreme Council General of Antiquities for Egypt at Giza. Front row (l to r): Lou Edens, Nena Powell Rice, Dr. Zahi Hawass, Elaine Johnson, Julia Khoury, Sally Anderson, Hany Iskandar (Egyptology Guide); Back row (l to r): Jane Vance, Marion Rice, Carl Johnson, Norman Khoury, and Richard Cooper. (Photo courtesy of Marion Rice)

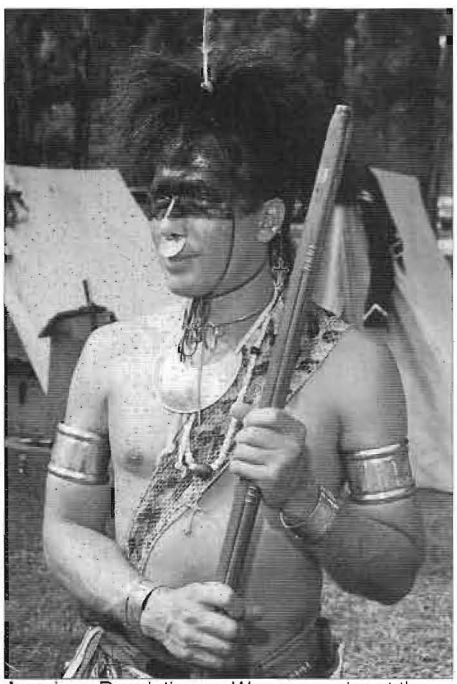
2003 South Carolina Archaeology Month

By Nena Powell Rice, Coordinator of South Carolina Archaeology Month

South Carolina Archaeology Month will be celebrated September 4-October 4 in many locations throughout South Carolina. Events and programs will be developed by dedicated professionals and organizations in order to bring our state's colorful past to life for all ages. Through such public outreach efforts, the archaeological community hopes to build regional and local public support for the preservation of our Native American, African, European, and other heritages.

Governor Jim Hodges signing the South Carolina Archaeology Month proclamation. Left to right behind the Governor are Nena Powell Rice, Rodger Stroup, Bruce Rippeteau, Jonathan Leader, Mike Foley, and Robert Cole. (Photo courtesy of the Governor's Office)

Coordinated by the SC Institute of Archaeology and Anthropology at the University of South Carolina, tours, lectures, demonstrations, exhibits, canoe trips, and open excavations are scheduled during September and October in several communities and state and national parks around South Carolina. The theme for the 12th annual SC Archaeology Month poster is "Rediscover the American Revolution in South Carolina: 1775-1783."



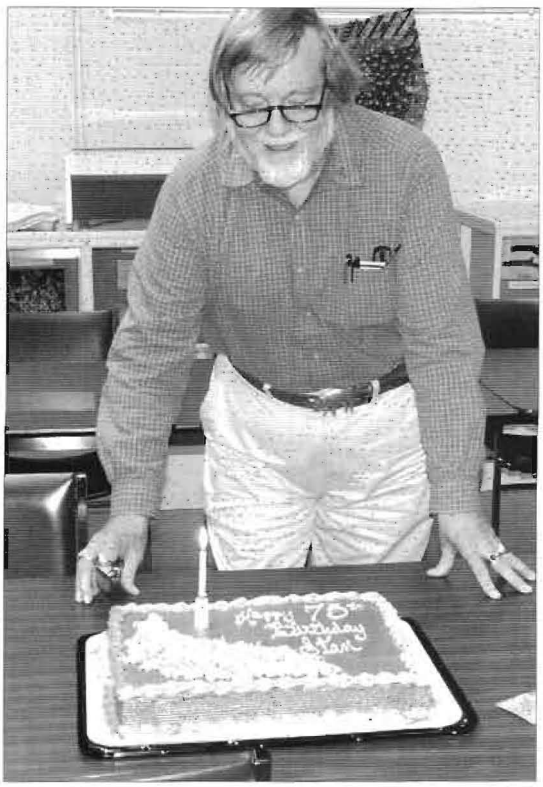
American Revolutionary War re-enactor at the annual archaeology festival. (SCIAA photo by Daryl P. Miller)

Archaeology Month activities will culminate with the 16th annual Archaeology Festival (now called Archaeology Discovery Day) to be held at Santee State Park on October 3-4, 2003. Sponsored by the Archaeological Society of South Carolina, SC Department of Parks, Recreation, and Tourism, and the SC Institute of Archaeology and Anthropology, this major event offers demonstrations of prehistoric and historic technologies and highlights performances by the Plantation Singers, storytelling, pottery making, stone tool making, blow guns, wrought iron making, children's games, artifact identification, exhibits, music, and a popular archaeological auction. Friday night will offer a Lantern Tour Through Time, where participants meet prehistoric people and historic characters from colonial and Civil War times.

The budget situation for South Carolina Archaeology Month this year is very grim. I have essentially lost all of the funding that has been available in past years. I am currently pursuing several grants from various local businesses to help pay for the printing and mailing of the poster and the Calendar of Events booklet. To defray some costs, I am asking all organizations who have programs listed in the booklet to donate a small fee. If the 85 organizations that usually participate give $100-$200, the cost will be met. I want to thank everyone who has supported these events and programs through the years, and I hope that the overall budget deficits are relieved in the coming year.

The deadline for submitting programs is June 1, 2003. If you know of cultural programs being offered anywhere in the state and would like it promoted in South Carolina Archaeology Month materials, and if you want to help with the planning of South Carolina Archaeology Month activities, please contact Nena Powell Rice, coordinator of Archaeology Month, at the SC Institute of Archaeology and Anthropology, (803) 777-8170 or 734-0567 or Lesley Drucker, coordinator of the Archaeology Discovery Day, at (803) 787-4169.

Stanley South Celebrates 75th Birthday on February 2, 2003



Stanley South on his 75th Birthday, February 2, 2003. (SCIAA photo)

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